ORDER NO. DPD83060003C8

Service Manual

Turntable System

SL-QX300/(K)

[E], [EK], [XL], [EG], [EB], [EH], [EF], [Ei], [EC], [XA], [XM]

Areas

* [E]	is available in Switzerland and Scandinavia.
* [EK]	is available in United Kingdom.
* [XL]	is available in Australia.
* [EG]	is available in F.R. Germany.
* [EB]	is available in Belgium.
* [EH]	is available in Holland.
* [EF]	is available in France.
* [Ei]	is available in Italy.
* [EC]	is available in Czechoslovakia.
* [XA]	is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XM]	is available in Central South America.

T4P is the standard mark for the "P-mount" plug-in connector system. Products carrying this mark are inter-changeable and compatible with each other.

***The colors of this model include silver and black.**
***The black type model is provided with (K) in the Service Manual.**

Specifications

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

■ General

Power supply:	For United Kingdom and Australia: 240V, AC 50Hz For Continental Europe: 220V, AC 50Hz For Others: 110—120/220—240V, 50/60Hz
Power consumption:	7 W
Dimensions: (W×H×D)	43 × 10 × 38 cm 43 × 36 × 42 cm (Maximum height when top (dust cover) is open.)
Weight:	6kg

■ Turntable section

Type:	Quartz direct drive
Features:	Fully automatic turntable Auto start/Auto lead-in Auto return, Auto stop Auto size select Record presence detection Repeat play, Manual play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32" inches)
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	±6% adjustment range
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

* This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −80 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Statically-balanced straight tonearm Plug-in connector cartridge system
Effective length:	230 cm (9-1/16")
Overhang:	15 mm (19/32")
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	7.5 g (without cartridge)
Stylus pressure adjustment range:	1.25 ±0.25 g
Applicable cartridge weight range:	6 g
Phono cable capacitance:	100 pf

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ Cartridge section

Type: Moving magnet stereo cartridge
Magnetic circuit: All laminated core
Frequency response: 10 Hz～50 kHz
20 Hz～10 kHz ±1 dB
Output voltage: 2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity
(7 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation: 22 dB at 1 kHz
Channel balance: Within 1.8 dB at 1 kHz
Recommended load impedance: 47 kΩ～100 kΩ
Compliance (dynamic): 12×10^{-6} cm/dyne at 100 Hz
Stylus pressure range: 1.25±0.25 g (12.5±2.5 mN)
Weight: 6 g (cartridge only)
Replacement stylus: EPS-P33ES

- The power supply fot this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.
  * [EK], [XA] and [XM] areas are provided with voltage selector.

■ CONTENTS

Page
SAFETY PRECAUTION 2
LOCATION OF CONTROLS 3
DISASSEMBLY INSTRUCTIONS . . . . . 4～6
MEASUREMENTS AND ADJUSTMENT 7
TROUBLE SHOOTING . . . . . 8～10
SCHEMATIC DIAGRAM 11, 12
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM 13, 14
REPLACEMENT PARTS LIST
  Electrical parts. 15
  Mechanical parts. 21
BLOCK DIAGRAM. 16
EXPLODED VIEWS
  Cabinet and chassis parts. 17, 18
  Automatic mechanism plate parts. 19
  Location of auto mechanism plate 20
PACKING 22

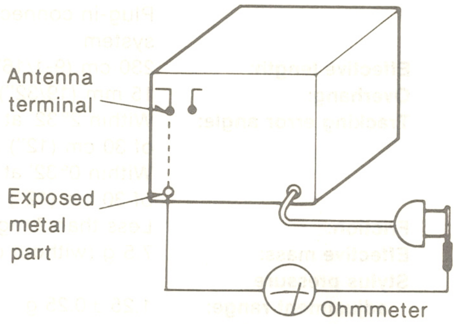
■ SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

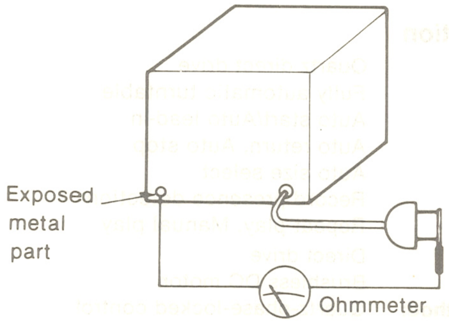
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3 MΩ—5.2 MΩ



(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ORDER NO. DPD83060003C8A

Turntable System SL-QX300/SL-QX300(K)

- This booklet contains the specifications and adjusting procedures for SL-QX300, written Germany, French and Spanish.
- File this manual together with the SL-QX300 service manual (Order No. DPD83060003C8).

- Diese Broschüre enthält die technischen Daten und die Beschreibungen der Justiermethoden für SL-QX300 in deutscher, französischer und spanisher Sprache.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für SL-QX300 (Betstell-Nr. DPD83060003C8) auf.

- Cette brochure contient les spécifications et les procédures de réglage pour le SL-QX300, écrites en allemand, en français et en espagnol.
- Classer ce manuel en même temps qu'avec le manuel de service du SL-QX300 (N° d'ordre: DPD83060003C8).

- Este librito contiene las especificaciones y procedimientos de ajuste para SL-QX300, escritas en alemán, francés y español.
- Guardar este manual juntamente con el manual de servicio de SL-QX300 (Pedido N°. DPD83060003C8).

DEUTSCH

■ TECHNISCHE DATEN

Änderungen der technischen Daten vorbehalten.
Die angegebenen Gewichts- und Abmessungsdaten sind ungefähre Werte.

■ Allgemeine Daten

Stromversorgung:	220V, 50 Hz Wechselstrom
Leistungsaufnahme:	7W
Abmessungen (BxHxT):	43 x 10 x 38 cm 43 x 36 x 42 cm Maximale Höhe bei geöffnetem Oberteil (Staubabdeckung).
Gewicht:	6 kg

■ Plattenspieler

Typ:	Quarz-Direktantrieb Automatischer Plattenspieler Auto-Start/Auto-Zuführung Rückführautomatik Stopautomatik Wiederhol-Betrieb Automatischer Plattengrößenahl Plattenpräsenz-Registrierung Manueller Betrieb
Antrieb:	Direktantrieb
Motor:	Kollektorloser Gleichstrommotor
Antriebsregel-Methode:	Quarz-Steuerung QPL
Plattenteller:	Aluminium-Spritzguß Durchmesser 31,2 cm
Plattenteller-Drehzahlen:	33-1/3 und 45 U/min
Gleichlaufschwankungen:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC98A bewertet)

* Diese Nennleistung bezieht sich auf das Laufwerk-Bauteil allein, ausschließlich Einfüsse von Schallplatte, Tonabnehmer oder Tonarm, aber einschließlich Plattenteller. Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

Rumpel-Fremdspannungsabstand:	−56 dB (IEC98A unbewertet)
Rumpel-Geräuschspannungsabstand:	−80 dB (IEC98A bewertet)

■ Tonarm

Typ:	Statish balancierter, gerader Tonarm Tonabnehmersystem vom Einsteck-Typ
Effektive Länge:	230 mm
Überhang:	15 mm
Spurfehlwinkel:	2°32′ bei der Einlaufrille einer 30 cm-Platte 0°32′ bei der Auslaufrille einer 30 cm-Platte
Lagerreibung:	Weniger als 7mg (horizontal, vertikal)
Effektive Masse:	7,5 g (ohne Tonabnehmer)
Auflagekraft-Einstellbereich:	1,25 ± 0,25 g
Zulässiger Tonabnehmer-Gewichtbereich:	6 g

■ Tonabnehmer

Typ:	Stereo-Magnet-Tonabnehmer mit Einpunkt-Aufhängungssystem
Magnetkreis:	Ganzlamellenkern
Frequenzgang:	10 Hz bis 50 kHz 20 Hz bis 10 kHz ± 1 dB
Ausgangsspannung:	2,5 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [7 mV bei 1 kHz 10 cm/s. Nullzu-Spitze, 45° (DIN 45 500)]
Kanaltrennung:	22 dB bei 1 kHz
Kanalabweichung:	Innerhalb 1,8 dB bei 1 kHz
Empfohlene Endimpedanz:	47 kΩ ~ 100 kΩ
Nachgiebigkeit (dynamisch):	12×10^{-6} cm/dyn bei 100 Hz
Auflagekraft-Einstellbereich:	1,25 ± 0,25 g (12,5 ± 2,5 mN)
Gewicht:	6 g (nur Tonabnehmer)
Ersatznadel:	EPS-33ES

■ JUSTIERUNGEN

• Justierung der Tonarmlifthöhe

Die Tonarmlifthöhe, d.h. der Abstand zwischen Nadelspitze und Schallplattenoberfläche bei Liftsteuerungs-Position "▼", wurde werkseitig auf ca. 5 ~7 mm eingstellt. **(Abb. 14)**

Falls der Abstand zu klein oder zu groß ist (z.B. wegen der unterschiedlichen Tonabnehmer-Abmessungen, drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn. **(Abb. 15)**

Drehung im Uhrzeigersinn

— Der Abstand zwischen der Platte und der Nadelspitze wird kleiner.

Drehung entgegen dem Uhrzeigersinn

— Der Abstand zwischen der Platte und der Nadelspitze wird größer.

• Justierung des Aufsetzpunktes der Automatik (Abb. 16)

Anmerkung:

Die Auto-Start- und die Auto-Rückkehr-Positions-Justierschraube sind zusammen angeordnet.

Wenn der Tonarm in der Nähe oder auf der Tonarmablage ist, so ist die Auto-Start-Positions-Justierschraubesichtbar. **(Abb. 16)**

Wenn der Tonarm in der Nähe der Plattenmitte ist, so ist die Auto-Rückkehr-Justierschraube sichtbar. **(Abb. 17)**

Wenn die Abtastnadel nicht in der Einlaufrille aufsetzt, justieren Sie wie folgt.

1. Befestigen Sie den Tonarm mit der Arretierklammer auf der Tonarmablage.
2. Nehmen Sie die Gummikappe von der Auto-Start-Positions-Justierschraube ab.
3. Drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn, wie erforderlich.

Falls der Aufsetzpunkt im Wiedergabeteil der Schallplatte liegt.

—Entgegen dem Uhrzeigersinn drehen.

Falls der Aufsetzpunkt außerhalb der Platte liegt.

—Im Uhrzeigersinn drehen.

Justieren Sie so, daß die Nadelspitze 1—2 mm vom Rand entfent auf der Platte aufsetzt.

• Justierung des Abschaltpunktes der Automatik (Abb. 17)

1. Setzen Sie zuerst den Nadelschutz auf.
2. Die Gummikappe abnehmen.
3. Führen Sie den Tonarm gegen die Plattenmitte.
   Die Justierschraube für den Abschaltpunkt der Automatik wird dann sichtbar.

Falls der Tonarm zu früh zurückkehrt.

—Entgegen dem Uhrzeigersinn drehen.

Falls der Tonarm nach Erreichen der Auslaufrille nicht zurückkehrt.

—Im Uhrzeigersinn drehen.

• Drehzahl-Feineinstellung (Tonhöhe-Regelung) (Abb. 18)

Neue QLS (Quartz Linear Synthesizer)-Schaltungen gestatten kontinuierliche Analog-Drehzahleinstellung bis zu etwa ±6%, während die quarzverschlossene Genauigkeit erhalten bleibt.

Wenn der Drehzahlregler in der Mittenstellung ist, rotiert der Plattenteller mit Normalgeschwindigkeit (33-1/3 oder 45 U/min).

Den Nullstellschalter ausschalten, dann den Drehzahl regler wie gewünscht einstellen, wobei man sich auf die Skala bezieht.

Anmerkung:

1) Den Nullstellschalter einschalten um Schallplatten mit Normalgeschwindigkeit abzuspielen.
2) Wenn der Nullstellschalter eingeschaltet ist, rotiert der Plattenteller mit Normalgeschwindigkeit, so daß die Drehzahl nicht einstellbar ist.
3) Das Stroboskop ist quarzverschlossen mit den den verschiedenen Drehzahleinstellungen, so daß die Strobomarkierungen immer stillzustehen scheinen.

• Drehzahlregelungs-Justierung (Referenzfrequenz) (Abb. 19)

1. Den Plattenteller und die Abdeckplatte abnehmen. (Siehe "Entfernen des Gehäuses und der Bodenplatte".)
2. Den Drehzahlregler in die Mittelposition stellen.
3. Das Oszilloskop an Anschluß (11) von IC302 anschließen.
4. Das Gerät durch Drücken der Ein/Aus-Taste einschalten.
5. VR301 drehen, so daß die Frequenz der Ausgangswellenform 523,64 kHz ~ 524,68 kHz (Periode: 1,9097μs ~ 1,9059μs) beträgt.

FRANÇAIS

CARACTERISTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.
Le poids et les dimensions donnés sont approximatifs.

Généralités

Alimentation:	CA 50 Hz, 220V
Consommation:	7 W
Dimensions: (L×H×P)	43 × 10 × 38 cm Hauteur maximum lorsque le dessus (couvercle protège-poussière) est ouvert. 43 × 36 × 42 cm
Poids:	6 kg

Platine de lecture

Type:	Entraînement direct à quartz Platine automatique Départ automatique/ Entrée automatique Retour automatique Arrêt automatique Sélection automatique du diamètre Détection de la présence d'un disque Audition répétée
Système d'entraînement:	Entraînement direct
Moteur:	Moteur C.C. san balai
Groupe de réglage:	Réglage d'accrochage de phase par quartz
Plateau de lecture:	En aluminium moulé sous pression Diamètre 31,2 cm
Vitesses de rotation:	33-1/3 et 45 t/p.m
Réglage d'écart:	Plage de réglage de ±6%
Pleurage et scintillement:	0,012% de valeur efficace* 0,025% de valeur efficace (JIS C5521) ±0,035% de crête (IEC 98A Pondéré)
Ronflement:	−56 dB (IEC 98A Non pondéré) −80 dB (IEC 98A Pondéré)

* Ce régime nominal se rapporte à l'ensemble du tourne-disque seul, excluant les effets du disque, de la cellule pick-up ou du bras de lecture, mais comprenant le plateau, Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.

Bras de lecture

Type:	Bras de lecture rectiligne statiquement équilibré Système de cellule de lecture à connecteur enfichable.
Longueur effective:	230 mm
Porte-à-faux:	15 mm
Angle d'erreur de piste:	En deçà de 2°32' au sillon extérieur d'un disque de 30 cm En deçà de 0°32' au sillon intérieur d'un disque de 30 cm
Frottement:	Moins de 7 mg (latéral et vertical)
Masse réelle:	7,5 g (sans la cellule pick-up)
Plage de réglage de la pression d'appui:	1,25 ±0,25 g
Gamme du poids des cellules pick-up utilisables:	6 g

Cellule pick-up

Type:	Cellule pick-up stéréo à aimant mobile
Circuit magnétique:	Noyau entièrement feuilleté
Réponse en fréquence:	10 Hz à 50 kHz 20 Hz à 10 kHz ±1 dB
Tension de sortie:	2,5 mV à 1kHz; 5 cm/s., zéro à vitesse latérale de crête (7 mV à 1 kHz 10 cm/s., zéro à vitesse 45° de crête [DIN 45 500])
Séparation des canaux:	22 dB à 1 kHz
Equilibrage des canaux:	En deçà de 1,8 dB à 1 kHz
Impédance de charge recommandée:	47 kΩ~100 kΩ
Elasticité (dynamique):	12 × 10 ^{6}cm/dyne à 100 Hz
Plage de la force verticale d'appui:	1,25 ±0,25 g (12,5 ±2,5 mN)
Poids:	6 g (cellule seule)
Pointe de lecture de remplacement:	EPS-33ES

RÉGLAGES

Mise au point de la hauteur de l'élévateur du bras

La hauteur de l'élévateur du bras (distance entre l'extrémité de la pointe de lecture et la surface du disque, lorsque la commande de pose et de relevage est à la position ''▼'') a été réglée en usine sur approximativement 5 à 7 mm. **(Fig. 14)**
Si l'écartement est trop étroit ou trop large, tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens contraire. **(Fig. 15)**

Rotation dans le sens des aiguilles d'une montre.
— La distance entre la surface du disque et l'extrémité de la pointe de lecture diminue.

Rotation dans le sens contraire des aiguilles d'une montre.
— La distance entre la surface du disque et l'extrémité de la pointe de lecture augmente.

Mise au point de la position de démarrage automatique (Fig. 16);

Nota:
Les vis de réglage du démarrage automatique et du retour automatique sont disposées ensemble.
Lorsque le bras de lecture est sur ou près de l'accoudoir du bras, la vis de réglage de démarrage automatique est visible **(Fig. 16)**; lorsque le bras de lecture est près du centre d'un disque, la vis de réglage du retour automatique est visible. **(Fig. 17)**

Si la pointe de lecture ne repose pas dans le sillon d'entrée, ajuster de la manière suivante.

1. Bloquer le bras de lecture sur le support du bras.
2. Retirer le capuchon en caoutchouc. **(Fig. 16)**
3. Avec un tournevis, tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens inverse selon la nécessité.

Si la tête de la pointe de lecture se dépose trop loin du sillon enregistré,
—tourner dans le sens contraire des aiguilles d'ue montre.
Si la tête de la pointe de lecture se dépose en dehors du disque,
—tourner dans le sens des aiguilles d'une montre.
Ajuster de façon à ce que l'extrémité de la pointe de lecture atterrisse à 1—2 mm à partir du bord du disque.

Mise au point de la position de retour automatique (Fig. 17)

(Retirer le tapis du plateau de lecture.)

1. Placer le capot protecteur de la pointe de lecture sur la cellule pick-up.
2. Déplacer le bras de lecture vers le centre du disque.
   Alors, la vis de réglage du retour automatique apparaîtra.

Si le bras de lecture tend à revenir vers le support du bras avant que l'audition ne soit terminée.
—tourner dans le sens contraire des aiguilles d'une montre,
Si le bras de lecture ne peut revenir en arrière après le dernier sillon,
—tourner dans le ses des aiguilles d'une montre.

Ajuste de la velocidad (control de altura del sonido) (Fig. 18)

La nueva circuiteria QLS (de sintonizador lineal de cuarzo) permite regular continuamente la altura analógica hasta aproximadamente ±6% manteniendo una precisión sincronizada por cuarzo.
Con el control de altura de sonido en la posición central, el plato giratorio gira a velocidad normal (33-1/3 ó 45 r.p.m.).
Primero apagar el interruptor de reposición y, luego, regular el control de altura según como se quiera, mirando las marcas de la escala.

Notas:

1) Cuando se quieran tocar discos a velocidad normal, encender el interruptor de reposición.
2) De estar encendido el interruptor de reposición, el plato giratorio gira a la velocidad normal no pudiéndose, por lo tanto, regular la altura tonal. Al encender el interruptor de reposición después de haber cambiado la altura del tono, el plato giratorio vuelve a la velocidad normal.
3) El estroboscopio queda bloqueado por cuarzo en las diferentes posiciones de altura, motivo por el cual las marcas del estroboscopio siempre dan la sensación de estar inmóviiles.

Ajustement du réglage de la distance interligne (fréquence de référence) (Fig. 19)

1. Retirer le plateau de la platine et le couvercle du panneau. (Se référer à ''Comment retirer le boîtier et le bâti de la face inférieure''.)
2. Régler le bouton de réglage de la distance interligne à la position centrale.
3. Raccorder l'oscilloscope à la borne (11) de IC302.
4. Appuyer sur le commutateur de marche/arrêt pour le mettre ''en marche''.
5. Tourner VR301, de telle sorte que la fréquence de la forme d'onde de sortie soit de 523,64 kHz ~ 524,68 kHz (période : 1,9097μs ~ 1,9059μs).

ESPAÑOL

ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.
El peso y las dimensiones indicados son apromimados.

En general

Alimentación de corriente:	CA 50 Hz, 220 V
Consumo de corriente:	7 W
Dimensiones: (Ancho×Alto×Prof.)	43 × 10 × 38 cm Altura máxima cuando la parte de arriba (tapa contra el polvo) está abierta. 43 × 36 × 42 cm
Peso:	6 kg

Sección del plato giratorio

Tipo:	Accinomiento directo por cuarzo Plato giratorio automático Arranque automático Descenso automático Retorno automático Parada automática Ejecución repetida Selección automática del tamaño Detección de presencia de disco
Método de accionamiento:	Accionamiento directo
Motor:	Motor de corriente continua sin escobillas
Método de control de accionamiento:	Control enciavado de fase de cuarzo
Platillo del plato giratorio:	De aluminio fundido Diámetro 31,2 cm
Velocidades del plato giratorio:	33-1/3 y 45 rpm
Control de altra de sonido:	Ambito de ajuste: ±6%
Ululaciones y trémolo:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% cresta (IEC 98A Ponderado)

* Estas características se refieren únicamente al conjunto del plato giratorio, con exclusión de los efectos provenientes del disco, cartucho o del brazo sonoro, incluyendo, empero, el platillo. La medida fue tomada por medio de la señal obtenida del generador de frecuencia incorporado del conjunto del motor.

Ruido de rodadura:	−56 dB (IEC 98A Non ponderado) −80 dB (IEC 98A Ponderado)

Sección del brazo sonoro

Tipo:	Brazo sonoro recto equilibrado estáticamente Sistema de cartucho con conector enchufable
Longitud efectiva:	230 mm
Proyección:	15 mm
Angulo de error de seguimiento:	Inferior a 2° 32' en el surco exterior de un disco de 30 cm Inferior a 0° 32' en el surco interior de un disco de 30 cm
Fricción:	Menos de 7 mg (en sentido lateral y vertical)
Masa efectiva:	7,5 g (sin cartucho)
Radio de ajuste de la presión de la aguja:	1,25 ±0,25 g
Radio de peso de cartucho utilizable:	6 g

Sección del cartucho

Tipo:	Cartucho estereofónico de imán móvil
Circuito magnético:	Núcleo totalmente laminado
Respuesta de frecuencia:	10 Hz a 50 kHz 20 Hz a 10 kHz ±1 dB
Voltaje de salida:	2,5 mV a 1 kHz velocidad lateral de cero a cresta de 5 cm/s [7 mV a 1 kHz Velocidad de 45° de cero a cresta de 10 cm/s (DIN 45 500)]
Separación de canales:	22 dB a 1 kHz
Equilibrio de canales:	Inferior a 1,8 dB a 1 kHz
Impedancia de carga recomendada:	47 kΩ a 100 kΩ
Elasticidad (dinámica):	12 × 10^{-6} cm/dina a 100 Hz
Radio de presión de la aguja:	1,25 ±0,25 g (12,5 ±2,5 mN)
Peso:	6 g (cartucho solamente)
Aguja de recambio:	EPS-33ES

AJUSTES

Ajuste de la altura de elevación del brazo

La altura de elevación del brazo (o sea, la distancia entre la punta de la aguja y la superficie del disco cuando el control de colocación está en la posición "▼") ha sido regulada en la fábrica aproximadamente entre 5 y 7 mm. **(Fig. 14)**

En caso que la distancia fuese demasiado abundante o demasiado escasa, girar el tornillo de ajuste hacia la derecha o hacia la izquierda. **(Fig. 15)**

Rotación hacia la derecha

— reduce la distancia entre el disco y la punta de la aguja.

Rotación hacia la izquierda

— aumenta la distancia entre el disco y la punta de la aguja.

Ajuste de la posición para el arranque automático (Fig. 16)

Nota:

Los respectivos tornillos de ajuste para arranque y retorno automáticos se encuentran juntos.

Cuando el brazo sonoro está puesto sobre el apoyo o cerca de éste, se dejará ver el tornillo de ajuste del arranque automático **(Fig. 16)**; estando cerca del centro del disco, se dejará ver el de ajuste del retorno automático. **(Fig. 17)**

En caso que la aguja no se depositara en el surco de comienzo, regular de la manera que sigue.

1. Sujetar el brazo sonoro al apoyo del mismo con la grapa.
2. Quitar la tapita de goma. **(Fig. 16)**
3. Girar el tornillito de ajuste hacia la derecha o hacia la izquierda usando un destornillador, según sea necesario.

En caso que la punta de la aguja se deposita muy dentro del surco grabado:

—Girar hacia la izquierda.

En caso que la punta de la aguja se deposita fuera del disco:

—Girar hacia la derecha.

Regular de manera tal que la punta de la aguja se deposite a uno o dos milímetros del borde del disco.

Ajuste de la posición para retorno automático (Fig. 17)

(Quitar la aimohadilla del plato giratorio.)

1. Colocar la protección de la aguja en el cartucho.
2. Mover el brazo sonoro hacia el centro del disco.
   Con ello, aparecerá el tornillo de ajuste del retorno automático.
   Cuando el brazo sonoro tienda a volver a su apoyo antes de terminal la ejecución:

—Girar hacia la izquierda.

En caso que el brazo sonoro no vuelva después de haber tocado el último surco del disco:

—Girar hacia la derecha.

Ajustement de la vitesse (Réglage d'écart) (Fig. 18)

Le nouveau montage QLS (Synthétiseur Linéaire à Quartz) permet un réglage d'écart analogique constant jusqu'à environ ±6% tout en conservant la précision asservie du quartz.

Lorsque le réglage d'écart est à la position centrale, la platine tourne à une vitesse normales (33-1/3 ou 45 t/p.m.). Mettre hors circuit l'interrupteur de réenclenchement, puis ajuster le réglage d'écart comme on le désire, en se référant aux repères de la graduation.

Nota:

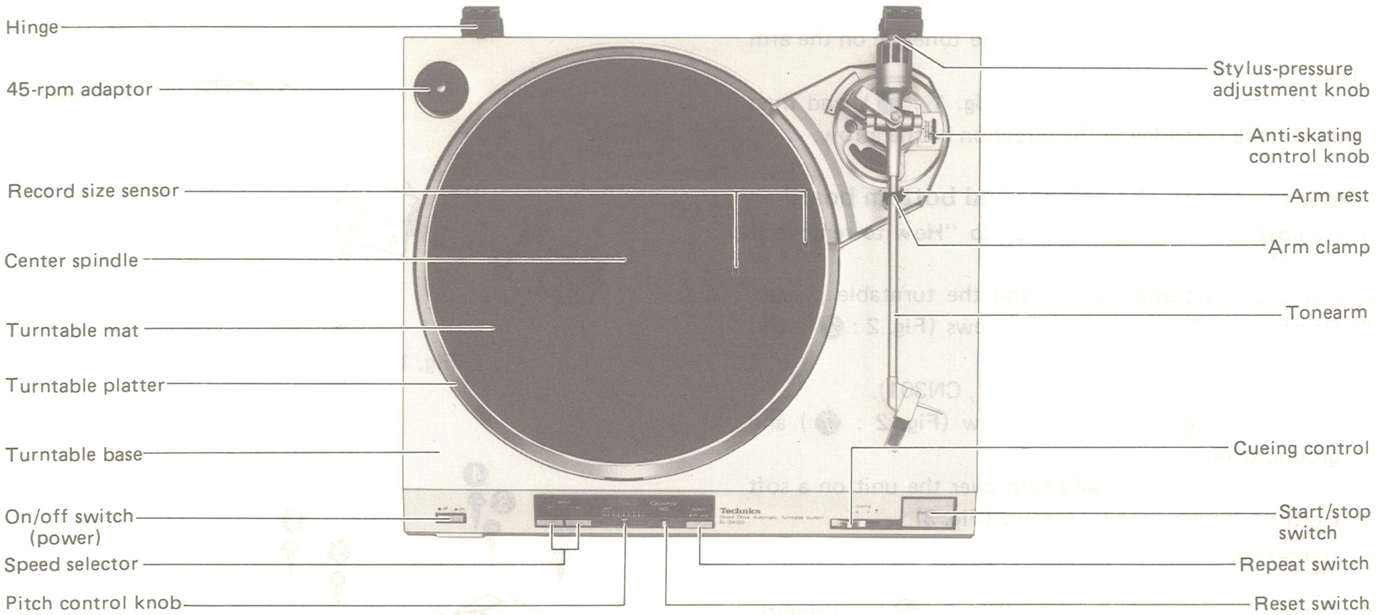
1) Mettre en marche l'interrupteur de réenclenchement pour faire jouer des disques à une vitesse normale.
2) Lorsque l'interrupteur de réenclenchement est en circuit, la platine tournera à une vitesse standard; ainsi, l'écart sera-t-il réglable. Si l'interrupteur de réenclenchement est mis en marche après le chamgement d'écart, la platine reviendra à la vitesse normale.
3) Le stroboscope est asservi par le quartz avec des réglages d'écart variables. Ainsi, les repères stroboscopiques semblent toujours se trouver à l'arrêt.

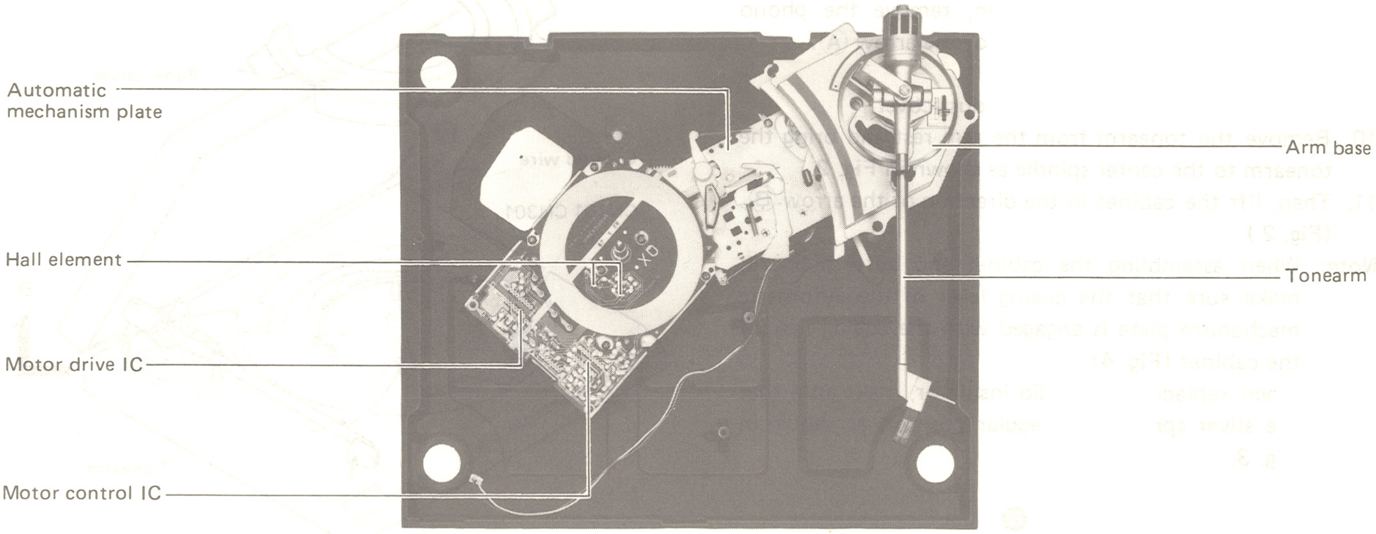
Ajuste de control de altura de los sonidos (Frecuencia de referencia) (Fig. 19)

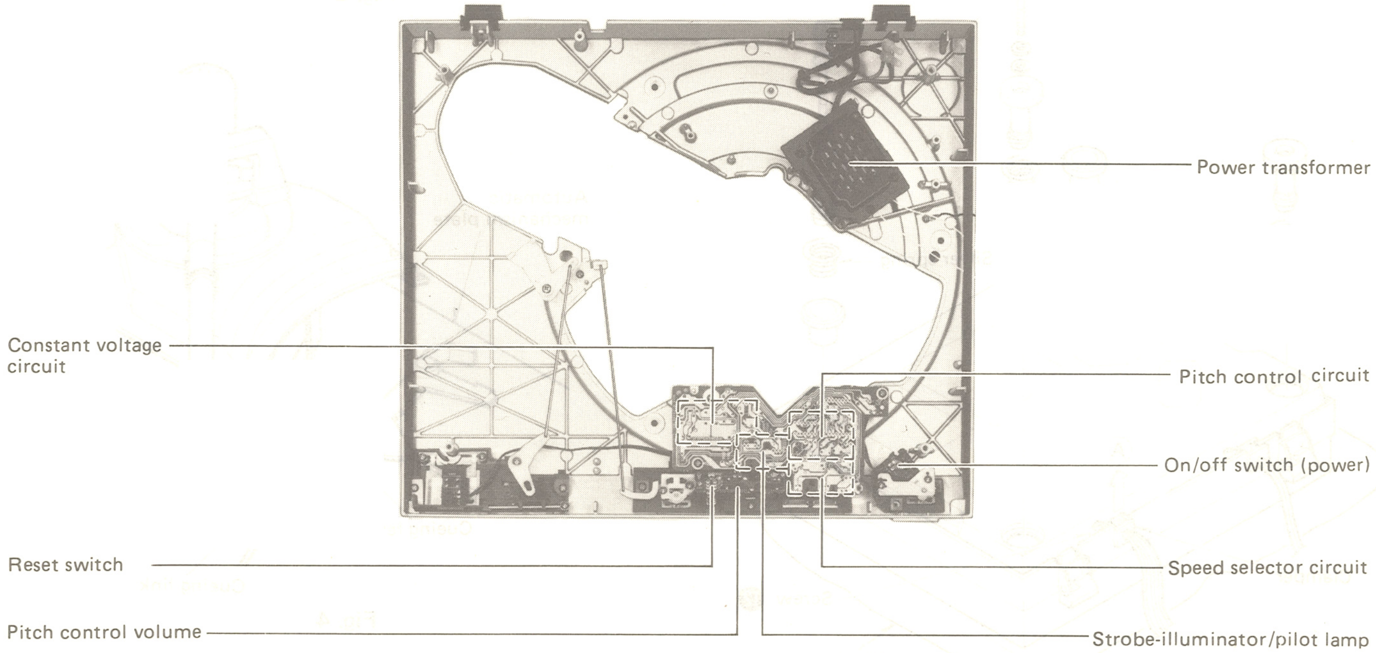
1. Remover el mecanismo de tornamesa y cubierta de panel. (Referir a "Cómo remover el gabinete y tablero inferior".)
2. Ajustar la perilla de control de altura a la posición central.
3. Conectar el osciloscopio al terminal (11) de IC302.
4. Apretar el interruptor de conexión/desconexión (on/off) para para conectarlo ("on").
5. Girar VR301 de manera que la frequencia de forma de onda de salida sea 523,64 kHz ~ 524,68 kHz (periodo: 1.9097μs ~ 1.9059μs).

Printed in Japan
83069900 Ⓗ AM

LOCATION OF CONTROLS


Hinge
45-rpm adaptor
Record size sensor
Center spindle
Turntable mat
Turntable platter
Turntable base
On/off switch (power)
Speed selector
Pitch control knob
Stylus-pressure adjustment knob
Anti-skating control knob
Arm rest
Arm clamp
Tonearm
Cueing control
Start/stop switch
Repeat switch
Reset switch
Technics


Automatic mechanism plate
Hall element
Motor drive IC
Motor control IC
Arm base
Tonearm


Power transformer
Constant voltage circuit
Pitch control circuit
On/off switch (power)
Reset switch
Speed selector circuit
Pitch control volume
Strobe-illuminator/pilot lamp

■ DISASSEMBLY INSTRUCTIONS

● How to remove the cartridge

1. Open the dust cover and clamp the tonearm on the arm rest.
2. Remove the cartridge setscrew **(Fig. 1 : ❶)**, and then pull out the cartridge in the direction of the arrow.

● How to remove the cabinet and bottom board

1. Remove the cartridge. **(Refer to "How to remove the cartridge".)**
2. Remove the turntable mat and the turntable platter.
3. Remove the 5 panel cover setscrews **(Fig. 2 : ❷ ~❻)** and the panel cover.
4. Remove the 2 connectors (CN101, CN301).
5. Remove the ground wire setscrew **(Fig. 2 : ❼)** and ground wire.
6. Close the dust cover, and turn over the unit on a soft cloth taking care not to damage **(Fig. 3)**.
7. Remove the 4 audio insulator setscrews **(Fig. 3 : ❽ ~ ⓫)**.
8. Remove the clamper setscrew **(Fig. 3 : ⓬)** and slightly lift the bottom board. Then, remove the phono output clamper in the direction of the arrow Ⓐ. **(Fig. 3)**
9. Return the unit and remove the dust cover.
10. Remove the tonearm from the arm rest and bring the tonearm to the center spindle as shown in **Fig. 2**.
11. Then, lift the cabinet in the direction of the arrow Ⓑ. **(Fig. 2)**

Note: When assembling the cabinet and bottom board, make sure that the cueing lever of the automatic mechanism plate is engaged with the cueing link of the cabinet **(Fig. 4)**.
When replacing the audio insulator, make sure that the silver spring is in regular position as shown in **Fig. 3**.

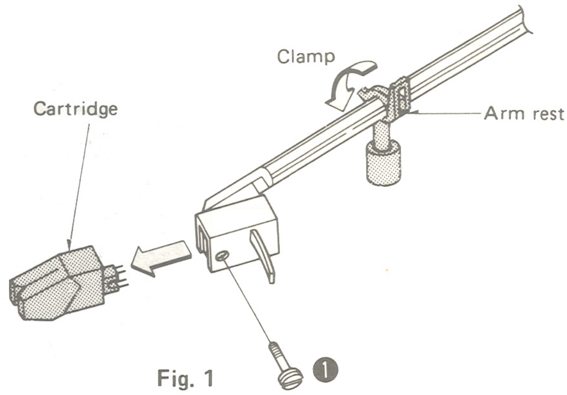

Clamp
Cartridge
Arm rest
❶

Fig. 1

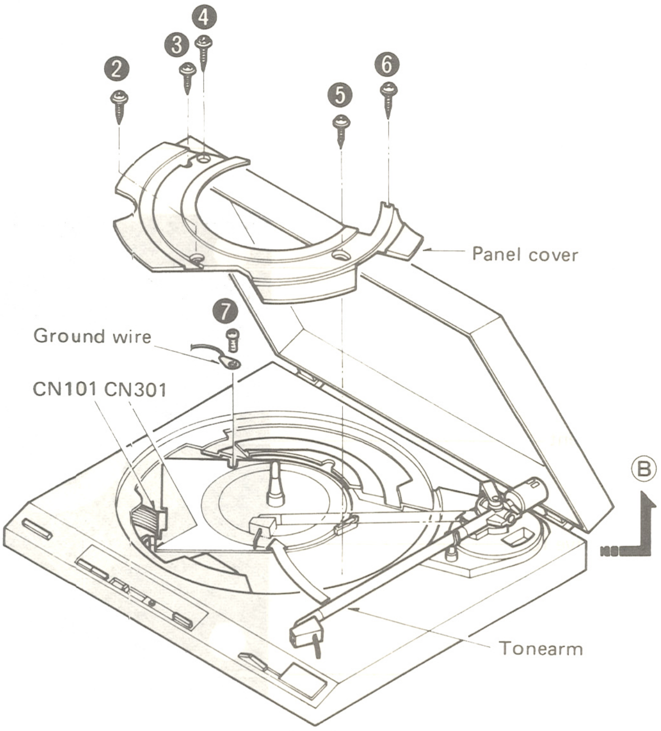

❹
❸
❷
❻
❺
Panel cover
❼
Ground wire
CN101 CN301
Ⓑ
Tonearm

Fig. 2

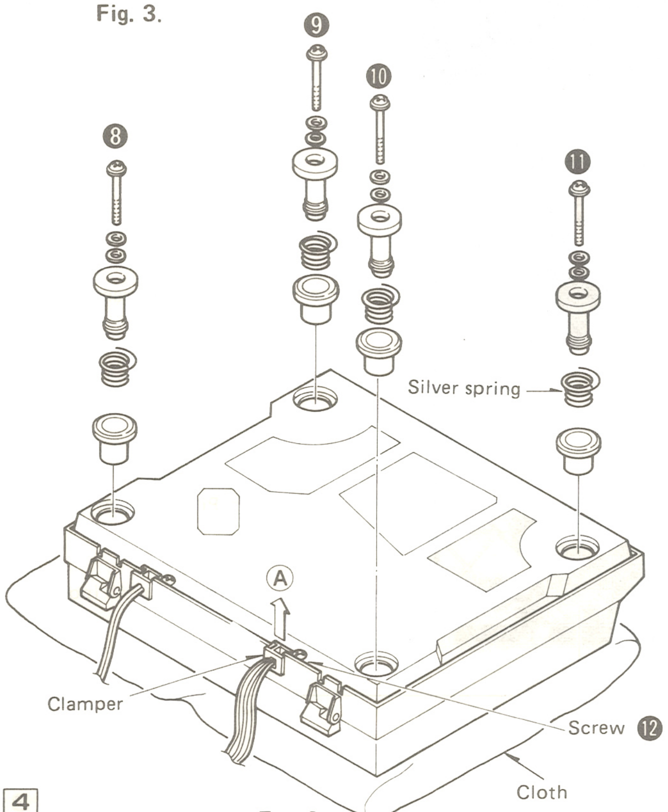

❾
❿
❽
⓫
Silver spring
Ⓐ
Clamper
Screw ⓬
Cloth

Fig. 3

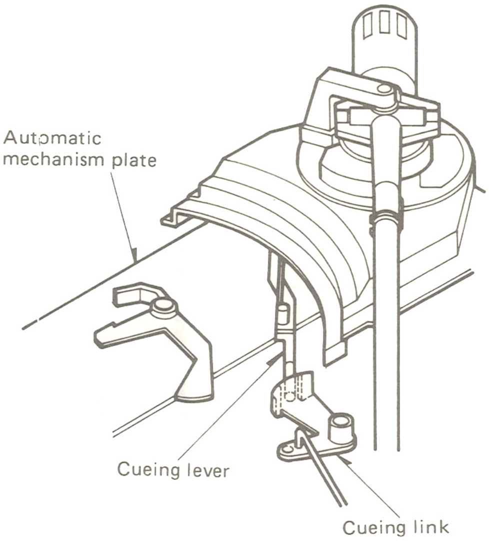

Automatic mechanism plate
Cueing lever
Cueing link

Fig. 4

- **How to remove the drive circuit P.C.B. and stator frame**

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 6 stator frame setscrews **(Fig. 5 : ⑬ ~ ⑱)**, then the stator frame can be removed.

- **To separate the drive circuit P.C.B. and stator frame**

1. Cut off the stopper by means of nippers.
2. Insert the screwdriver between stopper and P.C.B., then shift it up in the direction of arrow ② as in **Fig. 6.**
3. Remove the 4 setscrews **(Fig. 5 : ⑲ ~ ㉒)** of drive circuit P.C.B. Then the drive circuit P.C.B. can be separated from the stator frame.

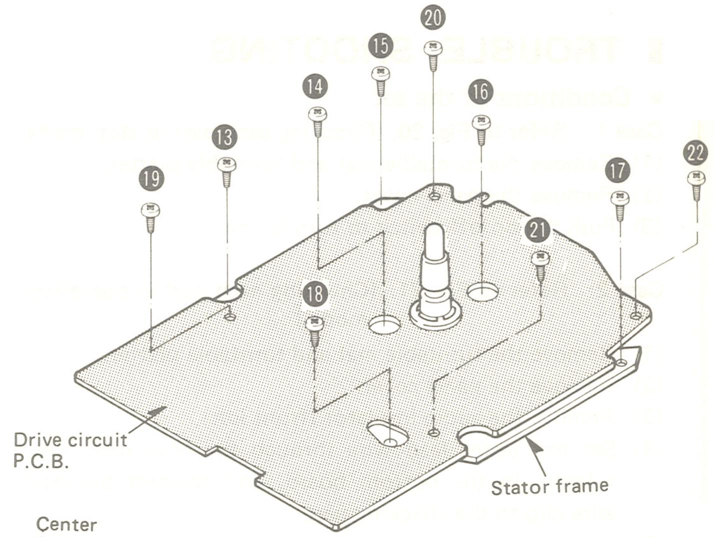

⑳
⑮
⑭
⑯
⑬
⑲
⑰
㉒
㉑
⑱
Drive circuit P.C.B.
Stator frame

Fig. 5

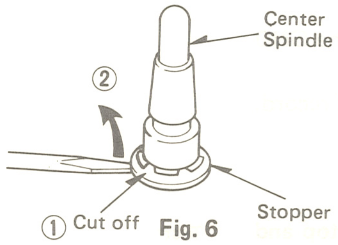

Center Spindle
②
Stopper
① Cut off

Fig. 6

- **How to remove the tonearm**

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 3 tonearm base setscrews **(Fig. 7 : ㉔ ~ ㉖).**
3. Turn over the tonearm base.
4. Remove the shield plate setscrew **(Fig. 8 : ㉗)** and remove the shield plate.
5. Remove the shielding tape and unsolder the 5 lead wires.
6. Remove the PU fixing plate setscrew **(Fig. 8 : ㉘)** and canceler spring.
7. Remove the 2 tonearm setscrews **(Fig. 8 : ㉙ , ㉚)**, then the tonearm can be removed in the direction of the arrow.

Note: When fitting the tonearm base to the automatic mechanism plate, make sure that the cueing lever is in "**cueing down**" position.

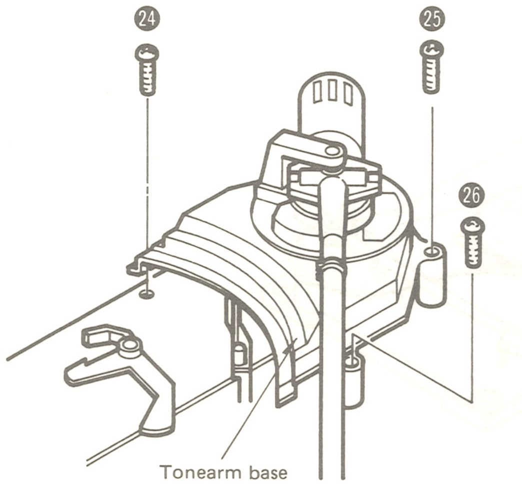

㉔
㉕
㉖
Tonearm base

Fig. 7

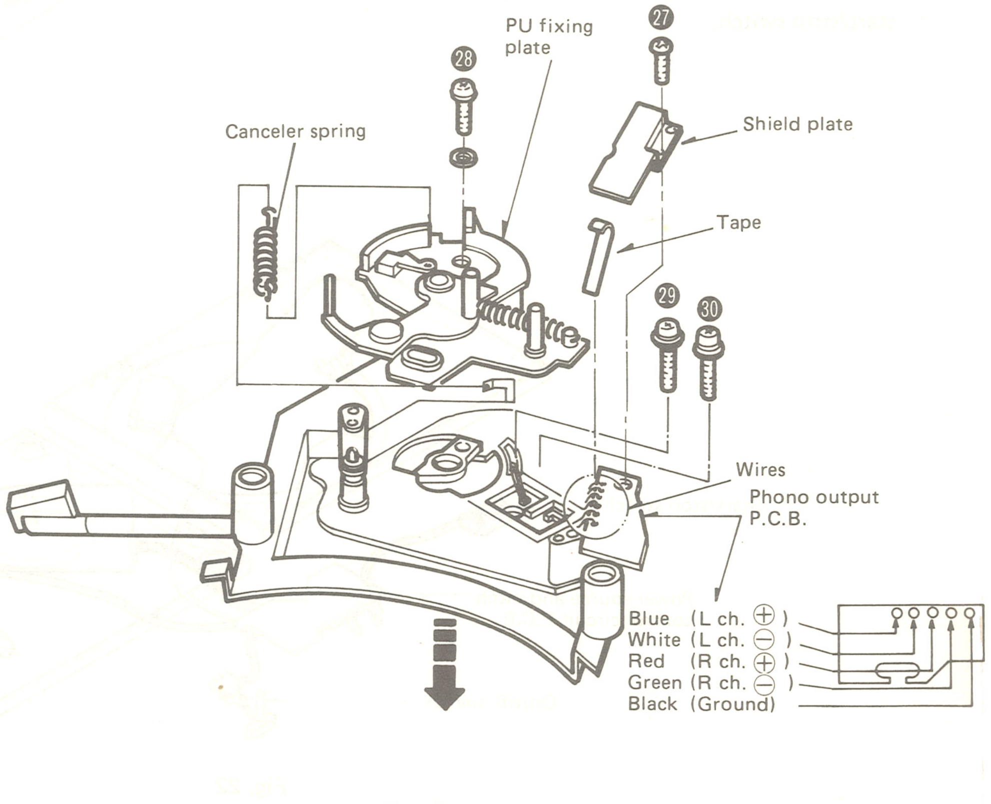

PU fixing plate
㉗
㉘
Canceler spring
Shield plate
Tape
㉙
㉚
Wires
Phono output P.C.B.
Blue (L ch. ⊕)
White (L ch. ⊖)
Red (R ch. ⊕)
Green (R ch. ⊖)
Black (Ground)

Fig. 8

- **How to remove the automatic mechanism plate Ass'y**

1. Remove the tonearm base. **(Refer to "How to remove the tonearm".)**
2. Remove the stator frame. **(Refer to item 2 of "How to remove the drive circuit P.C.B. and stator frame".)**
3. Remove the ground wire setscrew **(Fig. 9 : ㉛)** and the ground wire.
4. Remove the 4 automatic mechanism plate setscrews **(Fig. 9 : ㉜ ~ ㉟)**, Then the automatic mechanism plate Ass'y can be removed.

- **How to remove the control circuit P.C.B.**

(Power source and pitch control circuit)

1. Remove the cabinet and the bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Turn over the cabinet.
3. Remove the pitch control holder setscrew **(Fig. 10 : ㊱)** and pitch control holder.
4. Remove the 6 setscrews **(Fig. 10 : ㊲ ~ ㊷)** of control circuit P.C.B. Then, the control circuit P.C.B. can be removed.

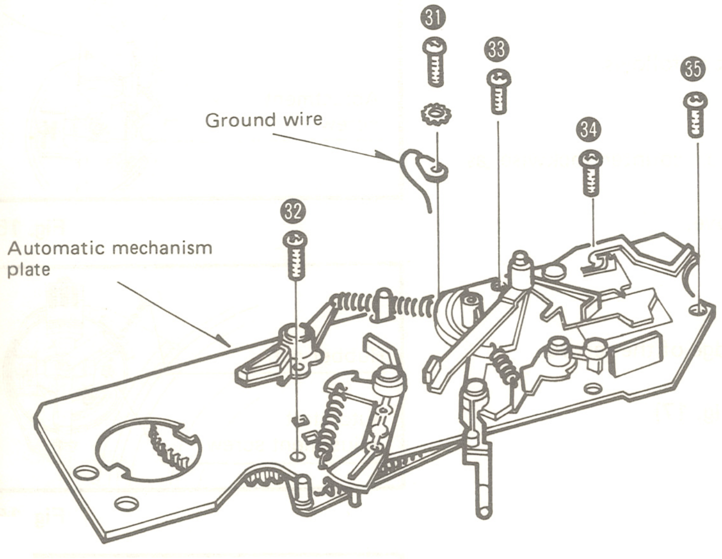

㉛
㉝
㉟
㉞
Ground wire
㉜
Automatic mechanism plate

Fig. 9

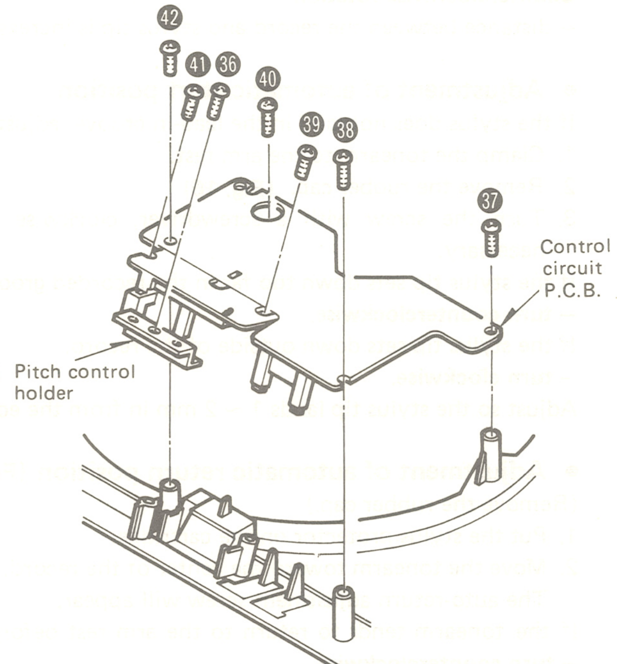

㊷
㊶
㊱
㊵
㊴
㊳
㊲
Control circuit P.C.B.
Pitch control holder

Fig. 10

- **How to remove the start/stop switch P.C.B.**

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Push the claw in the direction of the arrow Ⓐ. **(Fig. 11)**
3. Remove the P.C.B. in the direction of the arrow Ⓑ. **(Fig. 12)**

- **How to remove the on/off switch**

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 2 switch holder setscrews **(Fig. 12 : ㊸, ㊹)**, Then the on/off switch can be removed.

- **How to remove the Hall element**

1. Remove the turntable platter.
2. Remove the terminal solder by use of solder sucker.
3. Hold the Hall element with a tweezers and remove it while touching the soldering iron to the terminal. **(Fig. 13)**

Note: Fit the Hall element with the part No. print up. The reverse in terminal position is allowable provided that the printed side is up.

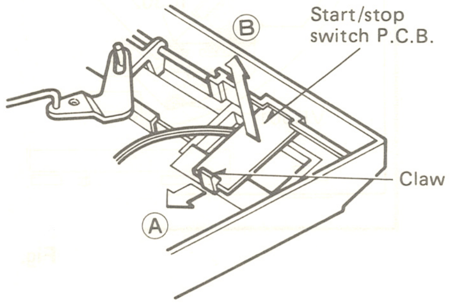

Ⓑ
Start/stop switch P.C.B.
Claw
Ⓐ

Fig. 11

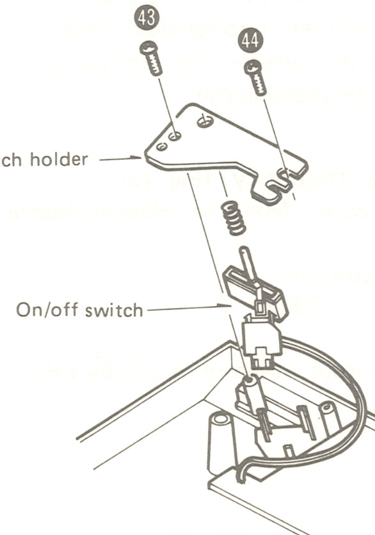

㊸
㊹
Switch holder
On/off switch

Fig. 12

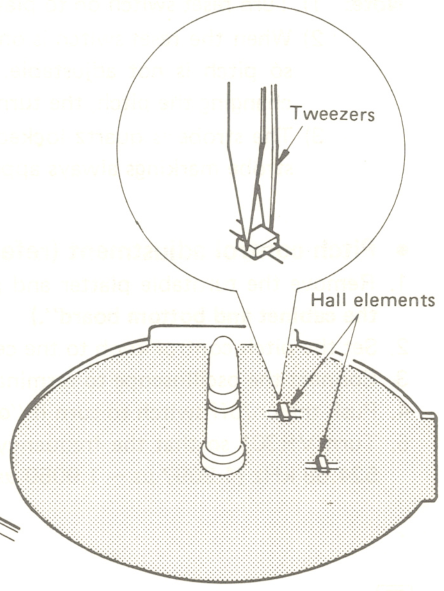

Tweezers
Hall elements

Fig. 13

■ MEASUREMENTS AND ADJUSTMENT

• Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the " ▼ " position) has been adjusted at the factory to approximately 5 to 7 mm (3/16" ~ 9/32"). **(Fig. 14)**

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. **(Fig. 15)**

Clockwise rotation

— distance between the record and stylus tip is decreased.

Counterclockwise rotation

— distance between the record and stylus tip is increased.

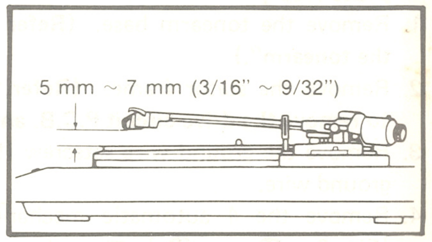


Fig. 14

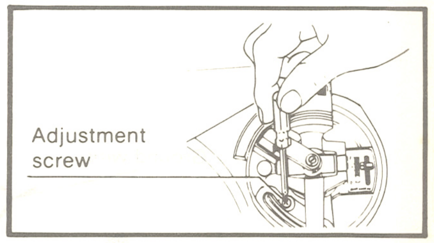


Fig. 15

• Adjustment of automatic start position

If the stylus does not land in the lead-in groove, adjust as follows.

1. Clamp the tonearm to the arm rest.
2. Remove the rubber cap. **(Fig. 16)**
3. Turn the screw with a screwdriver, clockwise or counterclockwise as necessary.

If the stylus tip sets down too far in the recorded groove.

— turn counterclockwise.

If the stylus tip sets down outside of the record.

— turn clockwise.

Adjust so the stylus tip lands 1 ~ 2 mm in from the edge of the record.

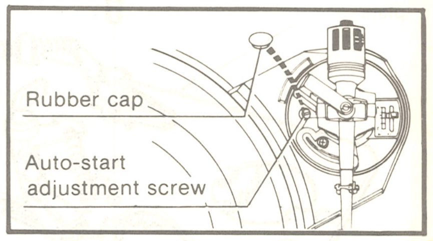


Fig. 16

• Adjustment of automatic return position (Fig. 17)

(Remove the rubber cap.)

1. Put the stylus protector on the cartridge.
2. Move the tonearm toward the center of the record.
   The auto-return adjustment screw will appear.

If the tonearm tends to return to the arm rest before the play has finished.

— turn counterclockwise.

If the tonearm fails to return after the final groove.

— turn clockwise.

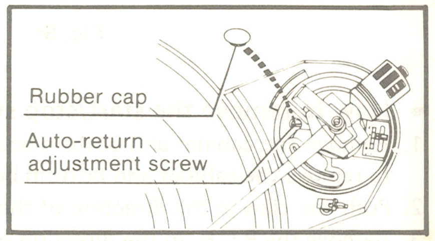


Fig. 17

• Speed adjustment (pitch control) (Fig. 18)

New QLS (Quartz Linear Synthesizer) circuitry permits continuous analog pitch adjustment up to about ± 6% while maintaining quartz locked accuracy.

When the pitch control is at the center position, the turntable rotates at standard speed (33-1/3 or 45 rpm).

Turn off the reset switch, then adjust the pitch control as desired, referring to the scale markings.

Note: 1) Turn reset switch on to play records at standard speed.

2) When the reset switch is on, the turntable rotates at standard speed, so pitch is not adjustable. If the reset switch is turned on after changing the pitch, the turntable will return to standard speed.

3) The strobe is quartz locked with the variable pitch settings, so the strobe markings always appear to be standing still.

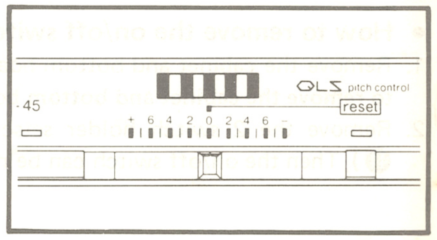


Fig. 18

• Pitch control adjustment (reference frequency) (Fig. 19)

1. Remove the turntable platter and panel cover. **(Refer to "How to remove the cabinet and bottom board".)**
2. Set the pitch control knob to the center position.
3. Connect the oscilloscope to terminal 11 of IC302.
4. Push the on/off switch to turn it "on".
5. Turn VR301 so that the frequency of output waveform is 523.64 kHz ~ 524.68 kHz (1.9097 μs ~ 1.9059 μs).

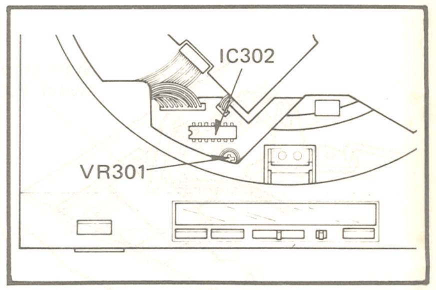


Fig. 19

■ TROUBLE SHOOTING

• Conditions of the set

Case 1: Refer to Fig. 20. (Checking each part in stop mode.)

(1) Remove the turntable mat and turntable platter.
(2) Remove the panel cover.
(3) Push the on/off switch to turn it "on".

Case 2: Refer to Fig. 21. (Checking each part in operation mode.)

(1) Remove the turntable mat and turntable platter.
(2) Remove the panel cover.
(3) Remove the audio insulator (front left).
(4) Set the tester lead wire through the hold (audio insulator) in the bottom board, and connect the lead wire clip to the checking part.
(5) Connect the ground terminal of the tester to the GND terminal of the phono cable.
(6) Put on the turntable platter, turntable mat and record.
(7) Push the on/off switch to turn it "on".
(8) Push the start/stop switch.

Case 3: Refer to Fig. 22. (Checking each part in stop and operation modes.)

(1) Remove the cabinet and bottom board.
(2) Remove the start/stop switch P.C.B.
(3) Remove the on/off switch.
(4) Connect the ground of control circuit P.C.B. to the automatic mechanism plate with wire.
(5) Push the on/off switch to turn it "on" and then check each part in stop mode.
(6) When checking in operation mode, connect the tester lead wire to the checking part. Next, put on the turntable platter, mat and record, then push the start/stop switch.

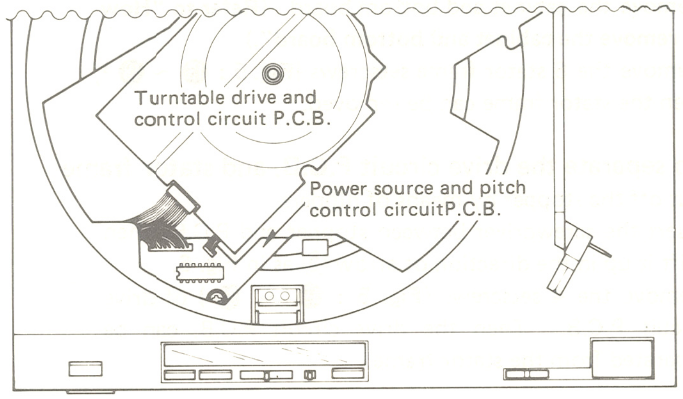

Turntable drive and control circuit P.C.B.
Power source and pitch control circuitP.C.B.

Fig. 20

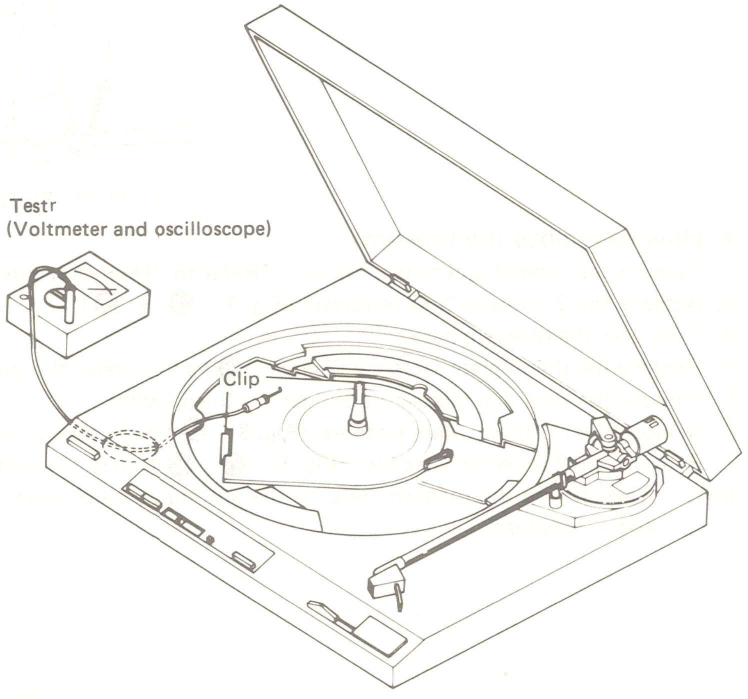


Fig. 21

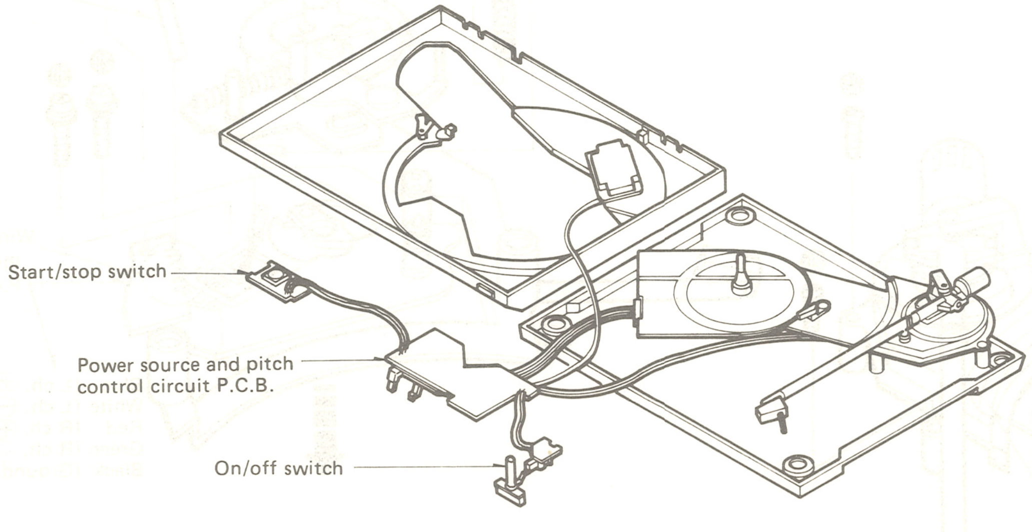
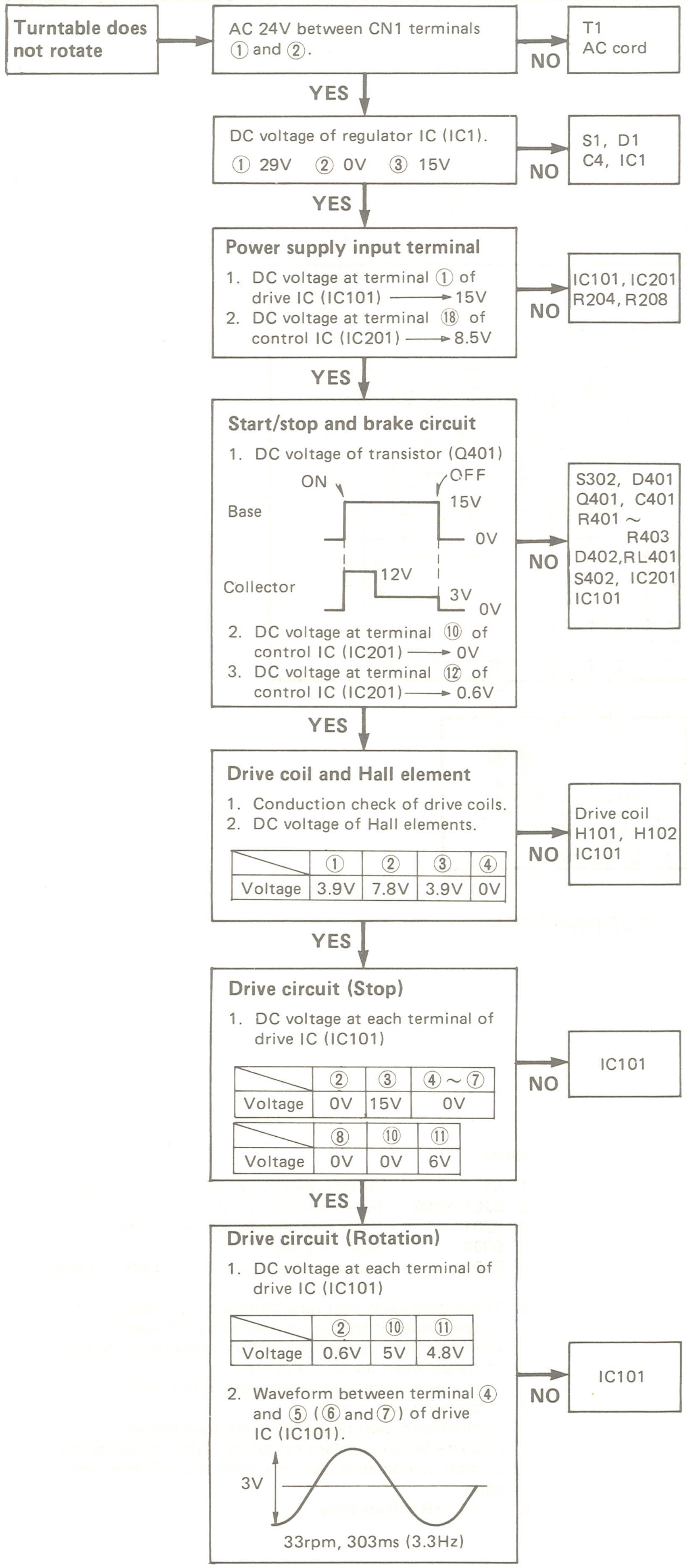


Fig. 22



Turntable does not rotate

AC 24V between CN1 terminals ① and ②.
NO → T1, AC cord
YES ↓

DC voltage of regulator IC (IC1).
① 29V ② 0V ③ 15V
NO → S1, D1, C4, IC1
YES ↓

Power supply input terminal
1. DC voltage at terminal ① of drive IC (IC101) ⟶ 15V
2. DC voltage at terminal ⑱ of control IC (IC201) ⟶ 8.5V

NO → IC101, IC201, R204, R208
YES ↓

Start/stop and brake circuit
1. DC voltage of transistor (Q401)

ON
OFF
Base
15V
0V
Collector
12V
3V
0V

2. DC voltage at terminal ⑩ of control IC (IC201) ⟶ 0V
3. DC voltage at terminal ⑫ of control IC (IC201) ⟶ 0.6V

NO → S302, D401, Q401, C401, R401 ~ R403, D402, RL401, S402, IC201, IC101
YES ↓

Drive coil and Hall element
1. Conduction check of drive coils.
2. DC voltage of Hall elements.

	①	②	③	④
Voltage	3.9V	7.8V	3.9V	0V

NO → Drive coil, H101, H102, IC101
YES ↓

Drive circuit (Stop)
1. DC voltage at each terminal of drive IC (IC101)

	②	③	④~⑦
Voltage	0V	15V	0V

	⑧	⑩	⑪
Voltage	0V	0V	6V

NO → IC101
YES ↓

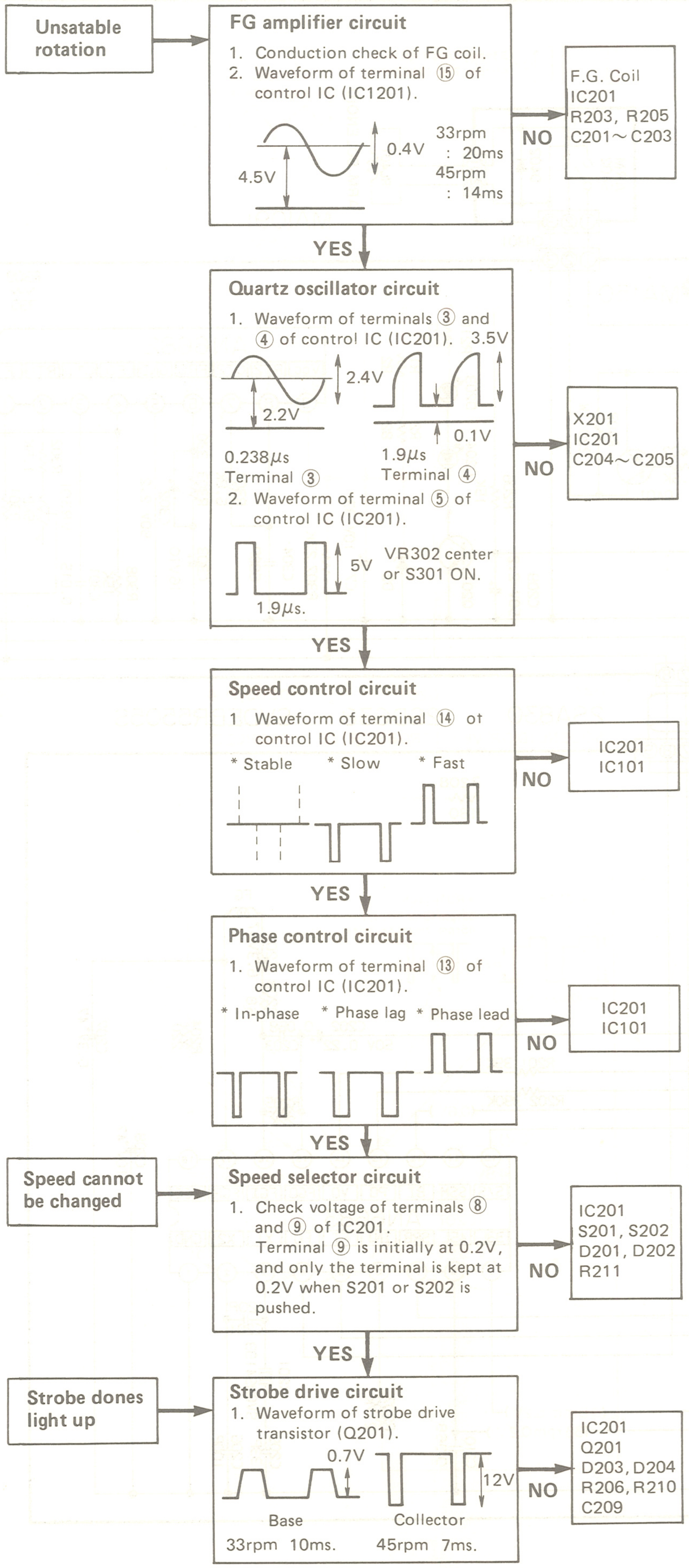
Drive circuit (Rotation)
1. DC voltage at each terminal of drive IC (IC101)

	②	⑩	⑪
Voltage	0.6V	5V	4.8V

2. Waveform between terminal ④ and ⑤ (⑥ and ⑦) of drive IC (IC101).

3V
33rpm, 303ms (3.3Hz)

NO → IC101



Unsatable rotation

FG amplifier circuit
1. Conduction check of FG coil.
2. Waveform of terminal ⑮ of control IC (IC1201).

4.5V
0.4V
33rpm : 20ms
45rpm : 14ms

NO → F.G. Coil, IC201, R203, R205, C201～C203
YES ↓

Quartz oscillator circuit
1. Waveform of terminals ③ and ④ of control IC (IC201).

3.5V
2.4V
2.2V
0.1V
0.238μs
Terminal ③
1.9μs
Terminal ④

2. Waveform of terminal ⑤ of control IC (IC201).

5V
VR302 center or S301 ON.
1.9μs.

NO → X201, IC201, C204～C205
YES ↓

Speed control circuit
1 Waveform of terminal ⑭ ot control IC (IC201).

* Stable
* Slow
* Fast

NO → IC201, IC101
YES ↓

Phase control circuit
1. Waveform of terminal ⑬ of control IC (IC201).

* In-phase
* Phase lag
* Phase lead

NO → IC201, IC101
YES ↓

Speed cannot be changed

Speed selector circuit
1. Check voltage of terminals ⑧ and ⑨ of IC201. Terminal ⑨ is initially at 0.2V, and only the terminal is kept at 0.2V when S201 or S202 is pushed.

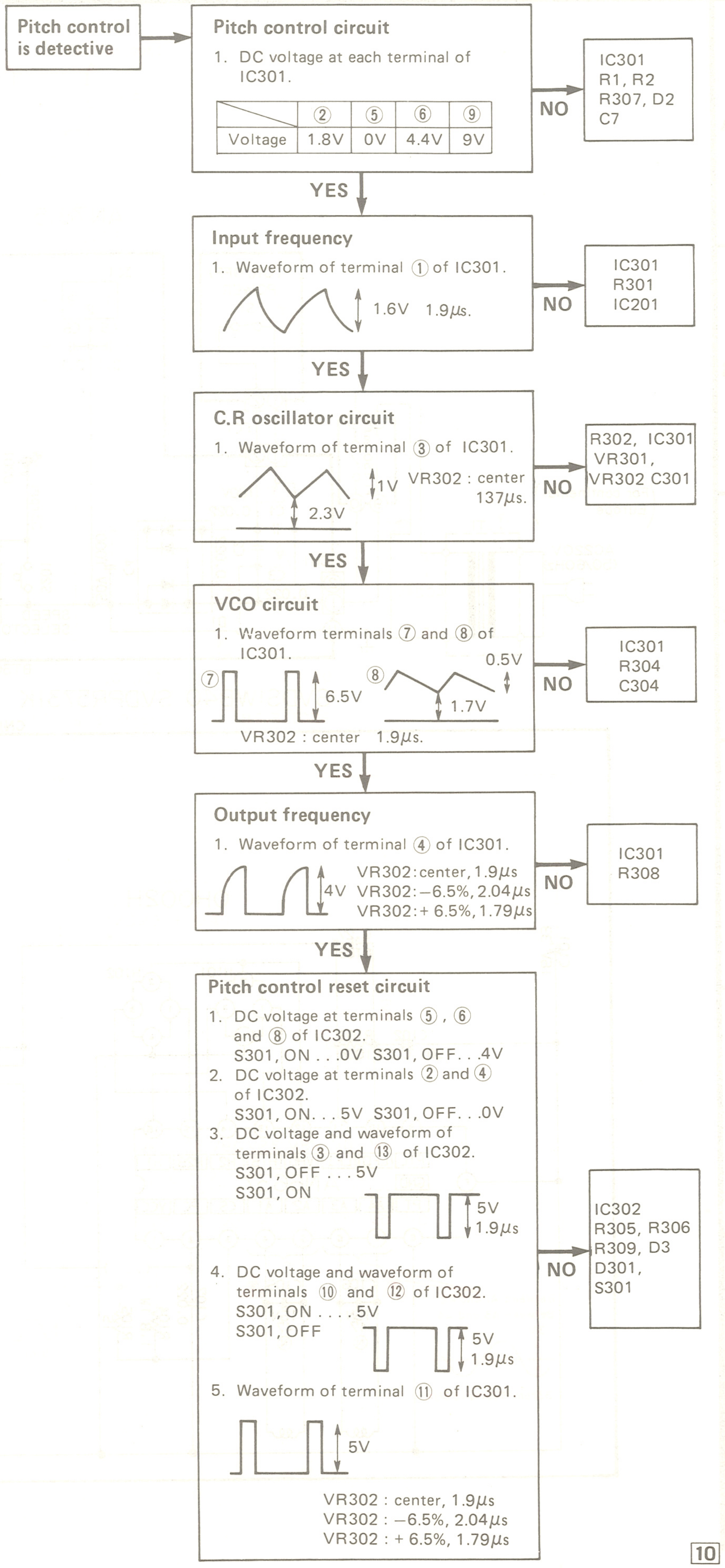
NO → IC201, S201, S202, D201, D202, R211
YES ↓

Strobe dones light up

Strobe drive circuit
1. Waveform of strobe drive transistor (Q201).

0.7V
12V
Base
Collector
33rpm 10ms.
45rpm 7ms.

NO → IC201, Q201, D203, D204, R206, R210, C209



Pitch control is detective

Pitch control circuit
1. DC voltage at each terminal of IC301.

	②	⑤	⑥	⑨
Voltage	1.8V	0V	4.4V	9V

NO → IC301, R1, R2, R307, D2, C7
YES ↓

Input frequency
1. Waveform of terminal ① of IC301.

1.6V
1.9μs.

NO → IC301, R301, IC201
YES ↓

C.R oscillator circuit
1. Waveform of terminal ③ of IC301.

1V
2.3V
VR302 : center 137μs.

NO → R302, IC301, VR301, VR302 C301
YES ↓

VCO circuit
1. Waveform terminals ⑦ and ⑧ of IC301.

⑦
6.5V
⑧
0.5V
1.7V
VR302 : center 1.9μs.

NO → IC301, R304, C304
YES ↓

Output frequency
1. Waveform of terminal ④ of IC301.

4V
VR302:center, 1.9μs
VR302:−6.5%, 2.04μs
VR302:+ 6.5%, 1.79μs

NO → IC301, R308
YES ↓

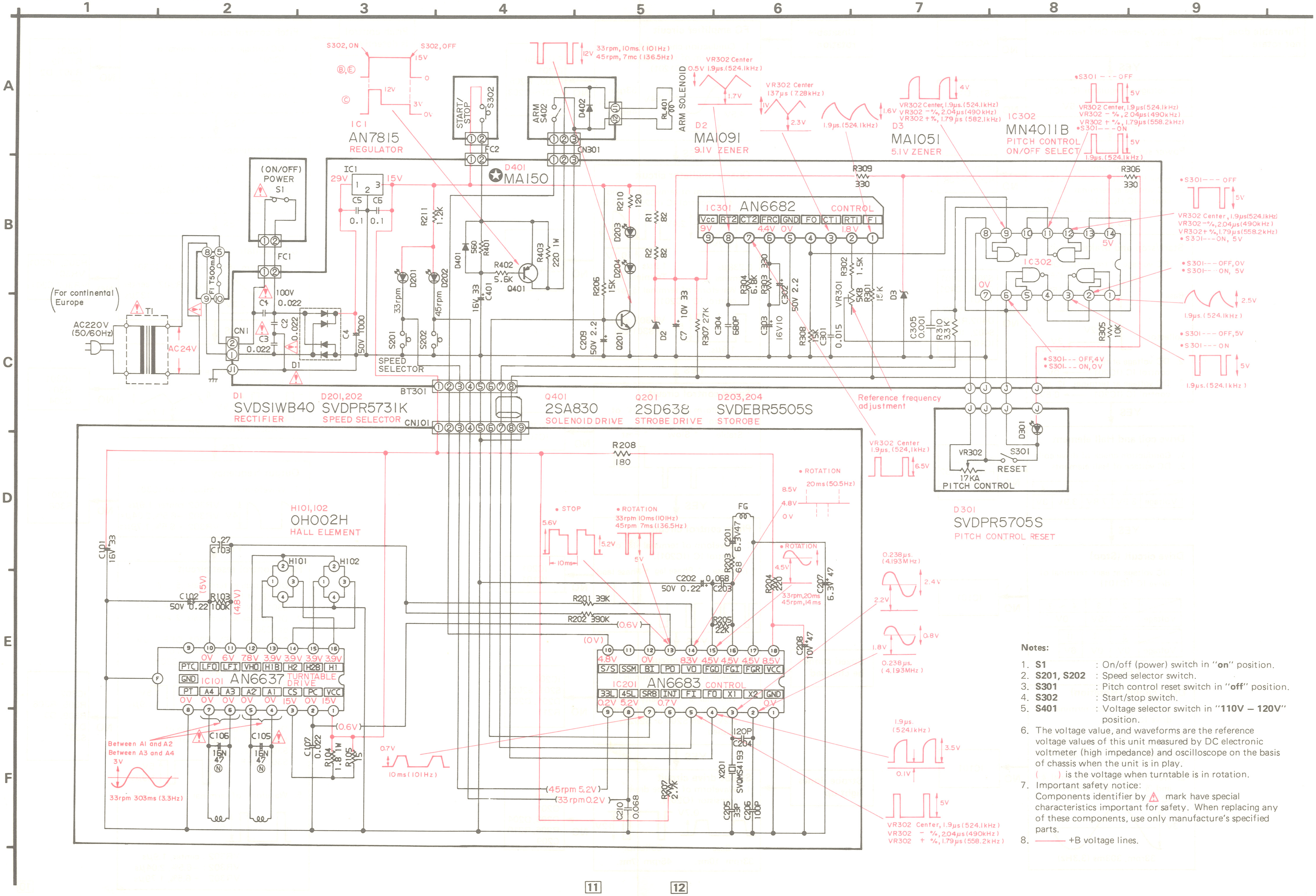
Pitch control reset circuit
1. DC voltage at terminals ⑤, ⑥ and ⑧ of IC302.
   S301, ON . . .0V S301, OFF. . .4V
2. DC voltage at terminals ② and ④ of IC302.
   S301, ON. . . 5V S301, OFF. . .0V
3. DC voltage and waveform of terminals ③ and ⑬ of IC302.
   S301, OFF . . . 5V
   S301, ON
4. DC voltage and waveform of terminals ⑩ and ⑫ of IC302.
   S301, ON 5V
   S301, OFF
5. Waveform of terminal ⑪ of IC301.

5V
1.9μs
5V
1.9μs
5V
VR302 : center, 1.9μs
VR302 : −6.5%, 2.04μs
VR302 : + 6.5%, 1.79μs

NO → IC302, R305, R306, R309, D3, D301, S301

SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
S302, ON
S302, OFF
15V
12V
3V
0V
0
Ⓑ, Ⓔ
Ⓒ
IC1
AN7815
REGULATOR
START/STOP
S302
FC2
ARM S402
D402
RL401
ARM SOLENOID
CN301
33rpm, 10ms. (101Hz)
45rpm, 7ms (136.5Hz)
VR302 Center
0.5V 1.9μs.(524.1kHz)
1.7V
VR302 Center
137μs (7.28kHz)
1V
2.3V
1.9μs.(524.1kHz)
1.6V
4V
VR302 Center, 1.9μs.(524.1kHz)
VR302 −%, 2.04μs(490kHz)
VR302 +%, 1.79μs (558.2kHz)
D2
MA1091
9.1V ZENER
D3
MA1051
5.1V ZENER
IC302
MN4011B
PITCH CONTROL
ON/OFF SELECT
S301 --- OFF
S301 --- ON
5V
1.9μs.(524.1kHz)
(ON/OFF)
POWER
S1
IC1
29V
15V
C5
C6
0.1
0.1
D401
MA150
R211 1.2K
R210 120
R1 82
R2 82
D203
D204
R403 220 1W
R402 5.6K
Q401
R401 560
C401 15V 33
FC1
F1 T500mA
100V
0.022
C1
C2 0.022
C3 0.022
C4 50V 1000
CN1
J1
D1
T1
AC24V
(For continental Europe)
AC220V (50/60Hz)
D201
D202
33rpm
45rpm
S201
S202
SPEED SELECTOR
C209 50V 2.2
Q201
C7 10V 33
R307 27K
C304 680P
R304 6.8K
R303 330
C303 16V 10
C302 50V 2.2
R308 15K
C301 0.015
VR301 5KB
R302 1.5K
R301 15K
C305 0.001
R310 3.3K
R305 10K
R309 330
R306 330
IC301 AN6682 CONTROL
Vcc RT2 CT2 FRC GND FO CT1 RT1 FI
9V 4.4V 0V 1.8V
IC302
0V
2.5V
S301 --- OFF, 0V
S301 --- ON, 5V
S301 --- OFF, 5V
S301 --- ON
S301 --- OFF, 4V
S301 --- ON, 0V
BT301
CN101
D1
SVDS1WB40
RECTIFIER
D201, 202
SVDPR5731K
SPEED SELECTOR
Q401
2SA830
SOLENOID DRIVE
Q201
2SD638
STROBE DRIVE
D203, 204
SVDEBR5505S
STOROBE
Reference frequency adjustment
VR302 Center
1.9μs.(524.1kHz)
6.5V
D301
VR302
17KA
S301
RESET
PITCH CONTROL
D301
SVDPR5705S
PITCH CONTROL RESET
R208 180
ROTATION
20ms (50.5Hz)
8.5V
4.8V
0V
H101, 102
OH002H
HALL ELEMENT
C101 16V 33
0.27
C103
H101
H102
C102 50V 0.22
R103 100K
(5V)
(4.8V)
STOP
5.6V
5.2V
10ms
33rpm 10ms (101Hz)
45rpm 7ms (136.5Hz)
5V
FG
C201 6.3V 47
R203 68
C202 50V 0.22
0.068
C203
R201 39K
R202 390K
(0.6V)
(0V)
R204 220
R205 22K
4.5V
33rpm, 20ms
45rpm, 14ms
C207 6.3V 47
C208 10V 47
0V 6V 7.8V 3.9V 3.9V 3.9V 3.9V
PTC LFO LFI VHO H1B H2 H2B H1
GND
IC101 AN6637 TURNTABLE DRIVE
PT A4 A3 A2 A1 CS PC VCC
0V 0V 0V 0V 0V 15V 0V 15V
4.8V 0V 8.3V 4.5V 4.5V 4.5V 8.5V
S/S SSM BI PO VO FGO FGI FGR VCC
IC201 AN6683 CONTROL
33L 45L SRB INT FI FO X1 X2 GND
0.2V 5.2V 0.7V 0V
Between A1 and A2
Between A3 and A4
3V
33rpm 303ms (3.3Hz)
C106 16V 47
C105 16V 47
C107 0.022
R104 1.8 1W
R105 15
(0.6V)
0.7V
10ms (101Hz)
(45rpm 5.2V)
(33rpm 0.2V)
C210 0.068
R207 2.7K
X201 SVQMS4193
120P
C204
C205 33P
C206 100P
0.238μs. (4.193MHz)
2.4V
2.2V
0.8V
1.8V
0.238μs. (4.193MHz)
1.9μs. (524.1kHz)
3.5V
0.1V
5V
VR302 Center, 1.9μs (524.1kHz)
VR302 −%, 2.04μs (490kHz)
VR302 +%, 1.79μs (558.2kHz)

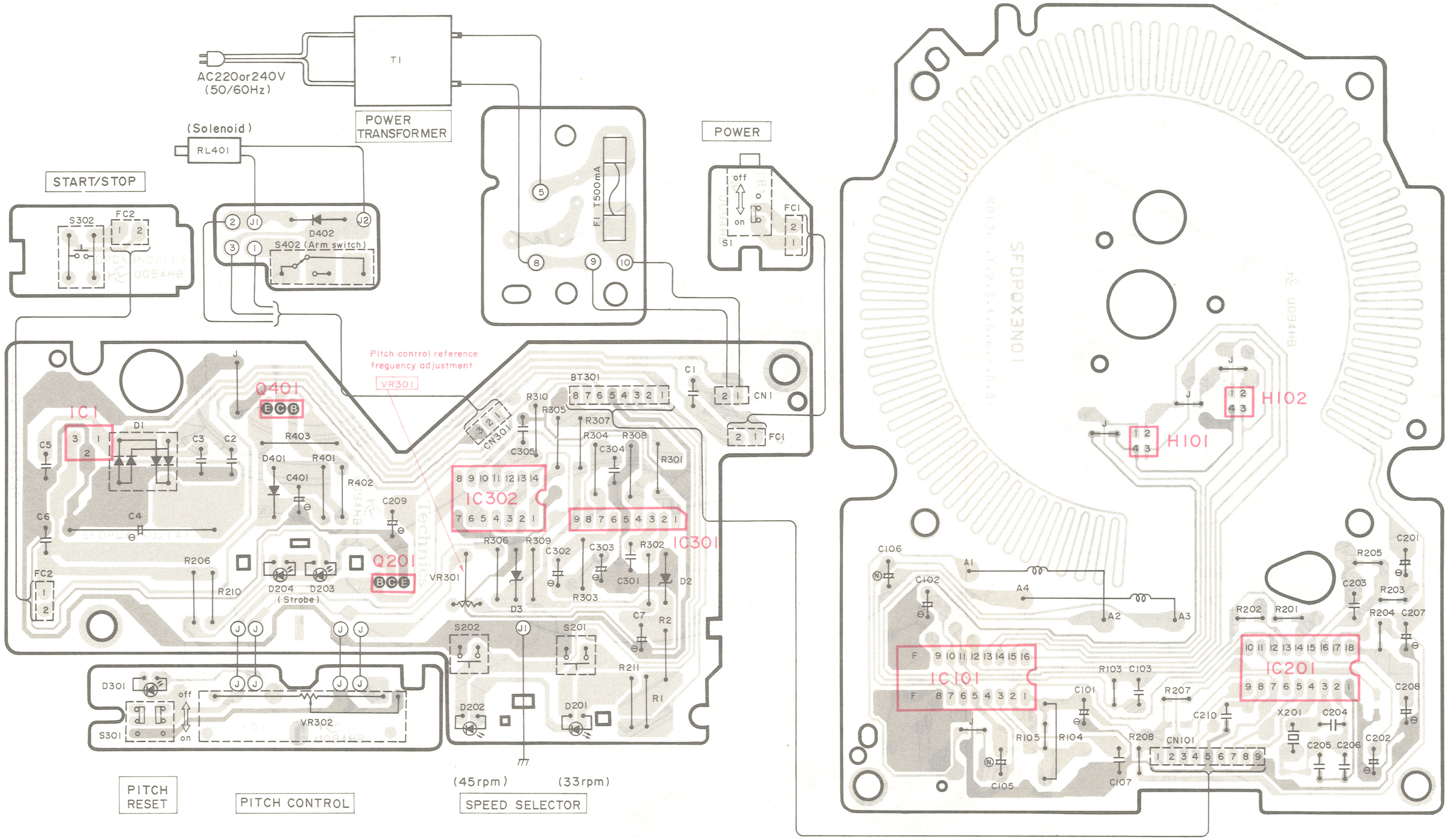
Notes:

1.	**S1**	: On/off (power) switch in "**on**" position.
2.	**S201, S202**	: Speed selector switch.
3.	**S301**	: Pitch control reset switch in "**off**" position.
4.	**S302**	: Start/stop switch.
5.	**S401**	: Voltage selector switch in "**110V − 120V**" position.

6. The voltage value, and waveforms are the reference voltage values of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis when the unit is in play.
   ( ) is the voltage when turntable is in rotation.
7. Important safety notice:
   Components identifier by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacture's specified parts.
8. ——— +B voltage lines.

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

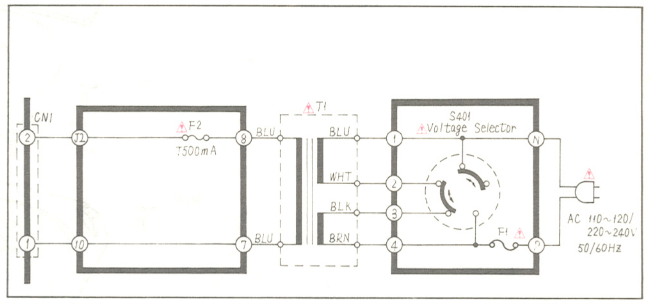
▨ Ground (Earth) lines


AC220or240V
(50/60Hz)
T1
POWER TRANSFORMER
(Solenoid)
RL401
START/STOP
S302
FC2
D402
S402 (Arm switch)
F1 T500mA
POWER
off
on
S1
FC1
Pitch control reference frequency adjustment
VR301
Q401
ECB
IC1
D1
C5
C3
C2
C6
C4
D401
R403
R401
C401
R402
C209
IC302
R310
R305
BT301
CN301
C305
R307
R304
R308
C304
R301
C1
CN1
FC1
IC301
R306
R309
C302
C303
R302
C301
D2
Q201
BCE
VR301
D3
R303
R206
R210
D204
D203
(Strobe)
S202
J1
S201
C7
R2
R211
R1
D301
S301
VR302
D202
D201
PITCH RESET
PITCH CONTROL
(45rpm)
(33rpm)
SPEED SELECTOR
SFDPQX3N01
H102
H101
C106
C102
A1
A4
A2
A3
IC101
R103
C103
C101
R105
R104
C105
C107
R207
R208
CN101
C210
R205
C201
C203
R203
R202
R201
R204
C207
IC201
C208
X201
C204
C205
C206
C202

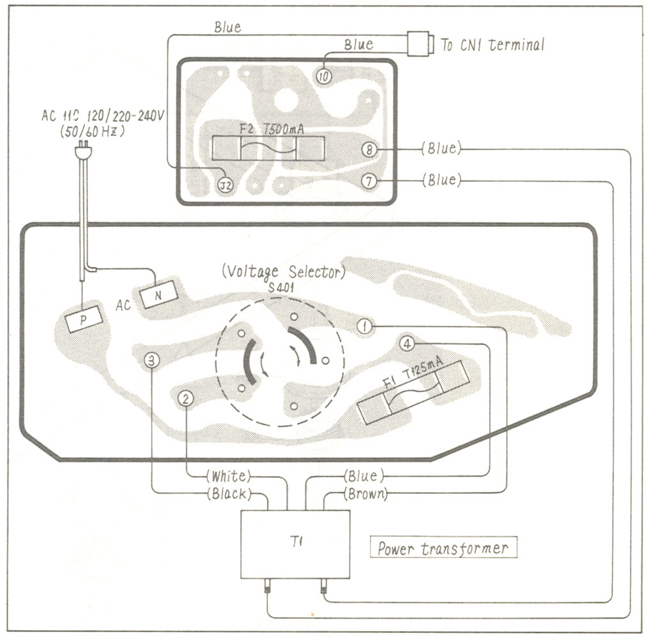
Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EG] is available in F.R. Germany.
- * [EB] is available in Belgium.
- * [EH] is available in Holland.
- * [EF] is available in France.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XM] is available in Central South America.

● Power source circuit
For [EK], [XA] and [XM] areas


CN1
F2
T500mA
T1
BLU
WHT
BLK
BRN
S401
Voltage Selector
F1
AC 110~120/ 220~240V 50/60Hz

● Power source circuit P.C.B.
For [EK], [XA] and [XM] areas


Blue
Blue
To CN1 terminal
AC 110 120/220-240V (50/60Hz)
F2 T500mA
(Blue)
(Blue)
(Voltage Selector)
S401
AC
N
P
F1 T125mA
(White)
(Black)
(Blue)
(Brown)
T1
Power transformer

■ REPLACEMENT PARTS LIST (Electrical parts)

Notes:

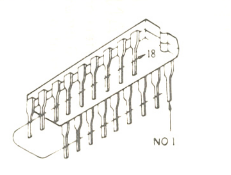
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the columns of description stand for the quantity per set.

Ref. No.		Part No.	Description
INTEGRATED CIRCUITS			
IC1		AN7815	Regulator
IC101		AN6637	Drive
IC201		AN6683	Control
IC301		AN6682	Pich Control
IC302		MN4011B	NAND Gate
TRANSISTORS			
Q201		2SD638	Strobe drive
Q401		2SA830T−93B	Solenoid drive
DIODES			
D1	⚠	SVDS1WB40	Rectifier
D2		MA1091	9.1V, Zener
D3		MA1051	5.1V, Zener
D201,202		SVDPR5731K	Light Emitting Diode
D203,204		SVDEBR5505S	Light Emitting Diode
D301		SVDPR5705S	Light Emitting Diode
D401	Ⓢ	MA162A	Timer, Solenoid
D402		SVDRM1Z	Arm Switch
VARIABLE RESISTORS			
VR301		EVN61AA00B53	Speed Adjustment 5kΩ(B)
VR302		EWANF5C15AU4	Pich Control 17kΩ
HALL ELEMENTS			
H101,102		OH−002	Turntable Position
CRYSTAL			
X201		SVQMS4193	4.193MHz
SWITCHES			
S1	⚠	SFDSC05N08	On/Off
S201,202		EVQQSH03B	Speed Selector
S301		ESB6439	Pich Control
S302		EVQQJR02K	Start/Stop
S401 〔XA-XM-EK〕	⚠	SFDSHXW0225	Voltage Selector
S402		SFDSSS5GLP	Arm
SOLENOID			
RL401		SFDZQX3M51A	Solenoid Ass'y, Start/Stop
FUSES			
F1〔XA-XM-EK〕	⚠	XBA2C012TR0	T 125mA 250V
F1 (Other Areas)	⚠	XBA2C05TR0	T 500mA 250V
F2〔XA-XM-EK〕	⚠	XBA2C05TR0	T 500mA 250V

Ref. No.		Part No.	Description
POWER TRANSFORMER			
T1〔XA-XM-EK〕	⚠	SLT57P24E	Power Source
T1〔XL〕	⚠	SLT57DT5E	Power Source
T1 (Other Areas)	⚠	SLT57DT4E	Power Source
CAPACITORS			
C1	⚠	ECQM1223KZ	Polyester, 100V, 0.022μF, ±10%
C2,3	⚠	ECKD1H223PF	Ceramic, 50V, 0.022μF, $^{+100\%}_{-0\%}$
C4		ECEB1HU102	Electrolytic, 1000μF
C5,6		ECQM1H104KV	Polyester, 50V, 0.1μF
C7		ECEA1AU330	Electrolytic, 10V, 33μF
C101		ECEA1CU330	Electrolytic, 16V, 33μF
C102	Ⓢ	ECEA1HSR22	Electrolytic, 50V, 0.22μF
C103		ECQV05274JZ	Polyester, 50V, 0.27μF, ±5%
C105,106	⚠	ECEA1CN470S	Non Polar Electrolytic, 16V, 47μF
C107		ECKD1H223ZF	Ceramic, 50V, 0.022μF, $^{+80\%}_{-20\%}$
C201		ECEA0JU470	Electrolytic, 6.3V, 47μF
C202	Ⓢ	ECEA50ZR22	Electrolytic, 50V, 0.22μF
C203		ECQM1H683KV	Polyester, 50V, 0.068μF, ±10%
C204		ECUV1H121JCM	Chip Ceramic, 50V, 120pF, ±5%
C205		ECUV1H330JCM	Chip Ceramic, 50V, 33pF, ±5%
C206		ECUV1H101JCM	Chip Ceramic, 50V, 100pF, ±5%
C207		ECEA0JU470	Electrolytic, 6.3V, 47μF
C208		ECEA1AU470	Electrolytic, 10V, 47μF
C209		ECEA1HU2R2	Electrolytic, 50V, 2.2μF
C210		ECUV1H683JFM	Chip Ceramic, 50V, 0.068μF
C301		ECQK1153JZ	Polyester, 100V, 0.015μF
C302		ECEA1HU2R2	Electrolytic, 50V, 2.2μF
C303		ECEA1CU100	Electrolytic, 16V, 10μF
C304	Ⓢ	ECCD1H681J	Ceramic, 50V, 680pF
C305	Ⓢ	ECKD1H102KB	Ceramic, 50V, 0.001μF

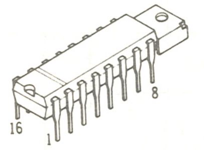
Ref. No.		Part No.	Description
CAPACITORS			
C401		ECEA1CU330	Electrolytic, 16V, 33μF
RESISTORS			
R1,2	Ⓢ	ERD25FJ820	Carbon, 1/4W, 82Ω
R103		ERD10TLJ104U	Chip Carbon, 1/8W, 100kΩ, ±5%
R104	Ⓢ	ERX1ANJ1R8	Metal Film, 1W, 1.8Ω, ±5%
R105		ERD10TLJ150U	Chip Carbon, 1/8W, 15Ω, ±5%
R201		ERD10TLJ393U	Chip Carbon, 1/8W, 39kΩ, ±5%
R202		ERD10TLJ394U	Chip Carbon, 1/8W, 390kΩ, ±5%
R203		ERD10TLJ680U	Chip Carbon, 1/8W, 68Ω, ±5%
R204		ERD10TLJ221U	Chip Carbon, 1/8W, 220Ω, ±5%
R205		ERD10TLJ223U	Chip Carbon, 1/8W, 22kΩ, ±5%
R206	Ⓢ	ERD25TJ153	Carbon, 1/4W, 15kΩ
R207		ERD10TLJ272U	Chip Carbon, 1/8W, 2.7kΩ, ±5%
R208		ERD10TLJ181U	Chip Carbon, 1/8W, 180Ω, ±5%
R210	Ⓢ	ERD25FJ121	Carbon, 1/4W, 120Ω
R211	Ⓢ	ERD25FJ122	Carbon, 1/4W, 1.2kΩ
R301	Ⓢ	ERD25TJ153	Carbon, 1/4W, 15kΩ
R302	Ⓢ	ERD25FJ152	Carbon, 1/4W, 1.5kΩ
R303	Ⓢ	ERD25FJ331	Carbon, 1/4W, 330Ω
R304	Ⓢ	ERD25FJ682	Carbon,1/4W, 6.8kΩ
R305	Ⓢ	ERD25FJ103	Carbon, 1/4W, 10kΩ
R306	Ⓢ	ERD25FJ331	Carbon, 1/4W, 330Ω
R307	Ⓢ	ERD25TJ273	Carbon, 1/4W, 27kΩ
R308	Ⓢ	ERD25TJ153	Carbon, 1/4W, 15kΩ
R309	Ⓢ	ERD25FJ331	Carbon, 1/4W, 330Ω
R310	Ⓢ	ERD25FJ332	Carbon, 1/4W, 3.3kΩ
R401	Ⓢ	ERD25FJ561	Carbon, 1/4W, 560Ω
R402	Ⓢ	ERD25FJ562	Carbon, 1/4W, 5.6kΩ
R403	Ⓢ	ERG1ANJ221	Metal Film, 1W, 220Ω

• Terminal guide of transistors, diodes and IC's

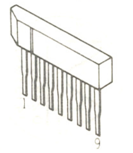


AN6683	18 pin
MN4011B	14 pin

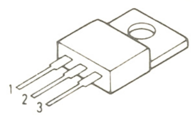
AN6637



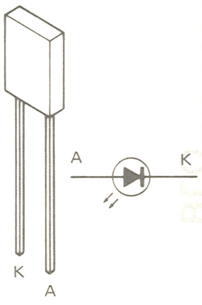
AN6682



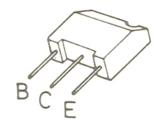
AN7815



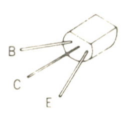
SVDPR5731K



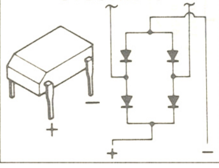
2SD638



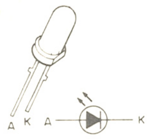
2SA830T



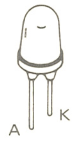
SVDS1WB40



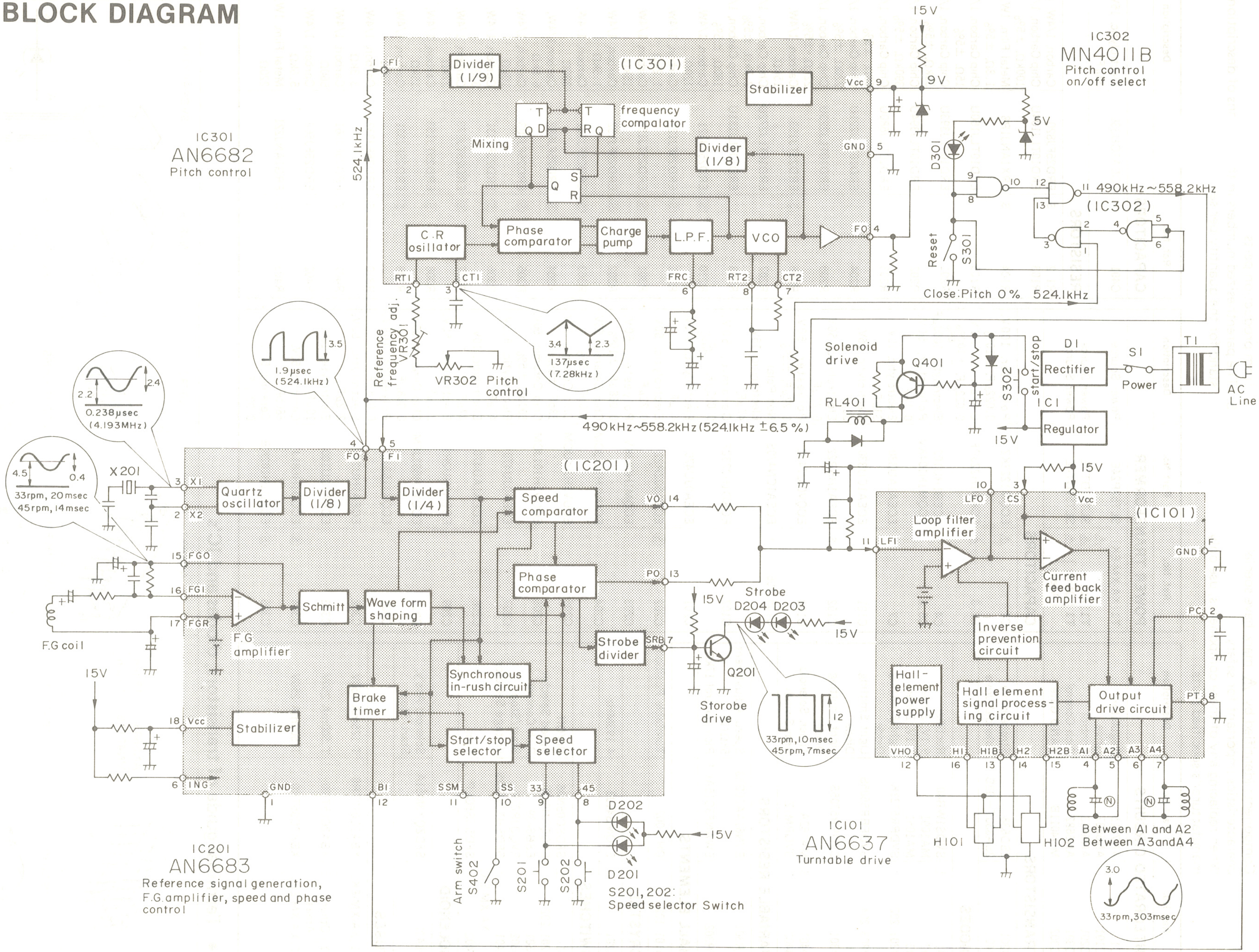
SVDEBR5505S



SVDPR5705-S

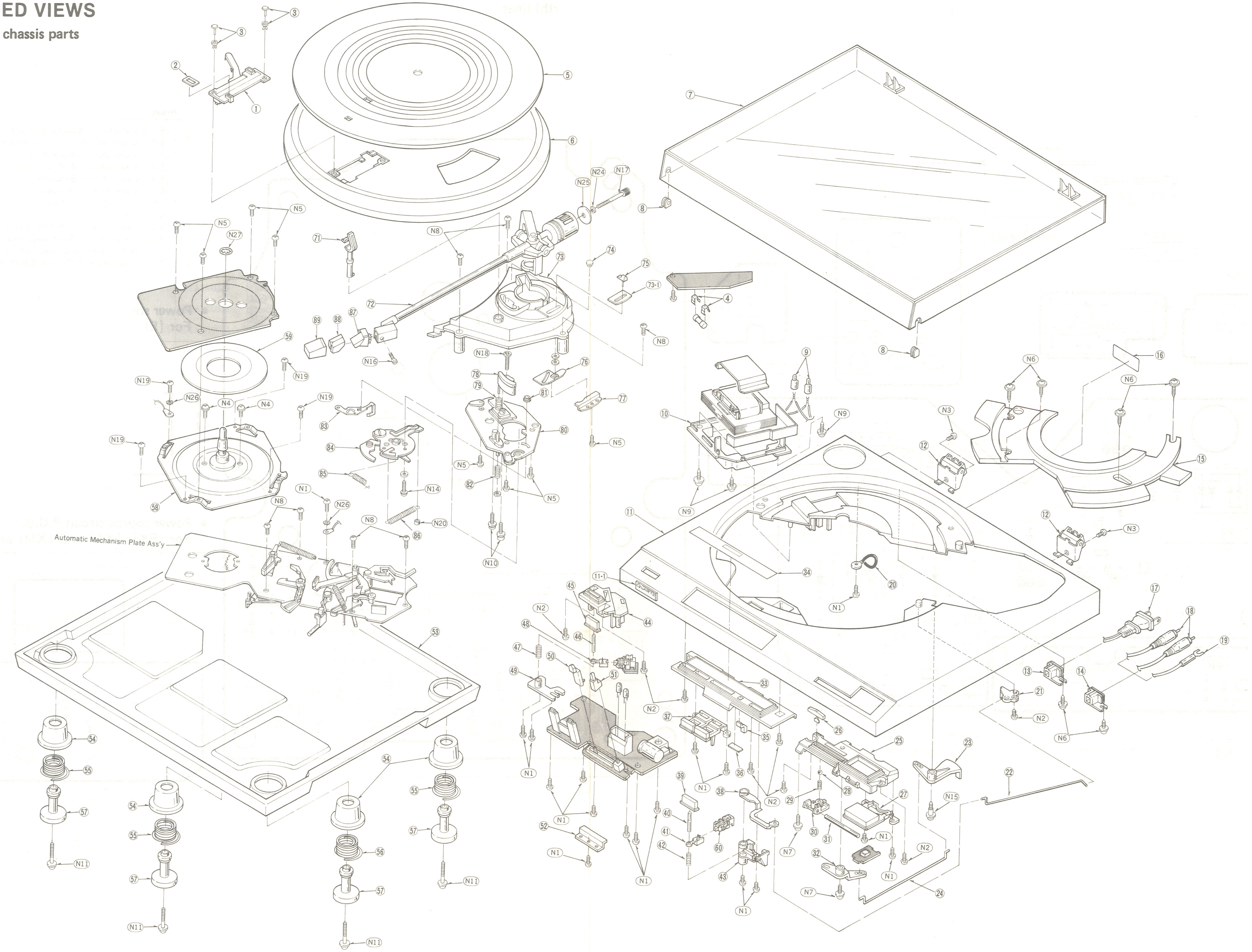


■ BLOCK DIAGRAM

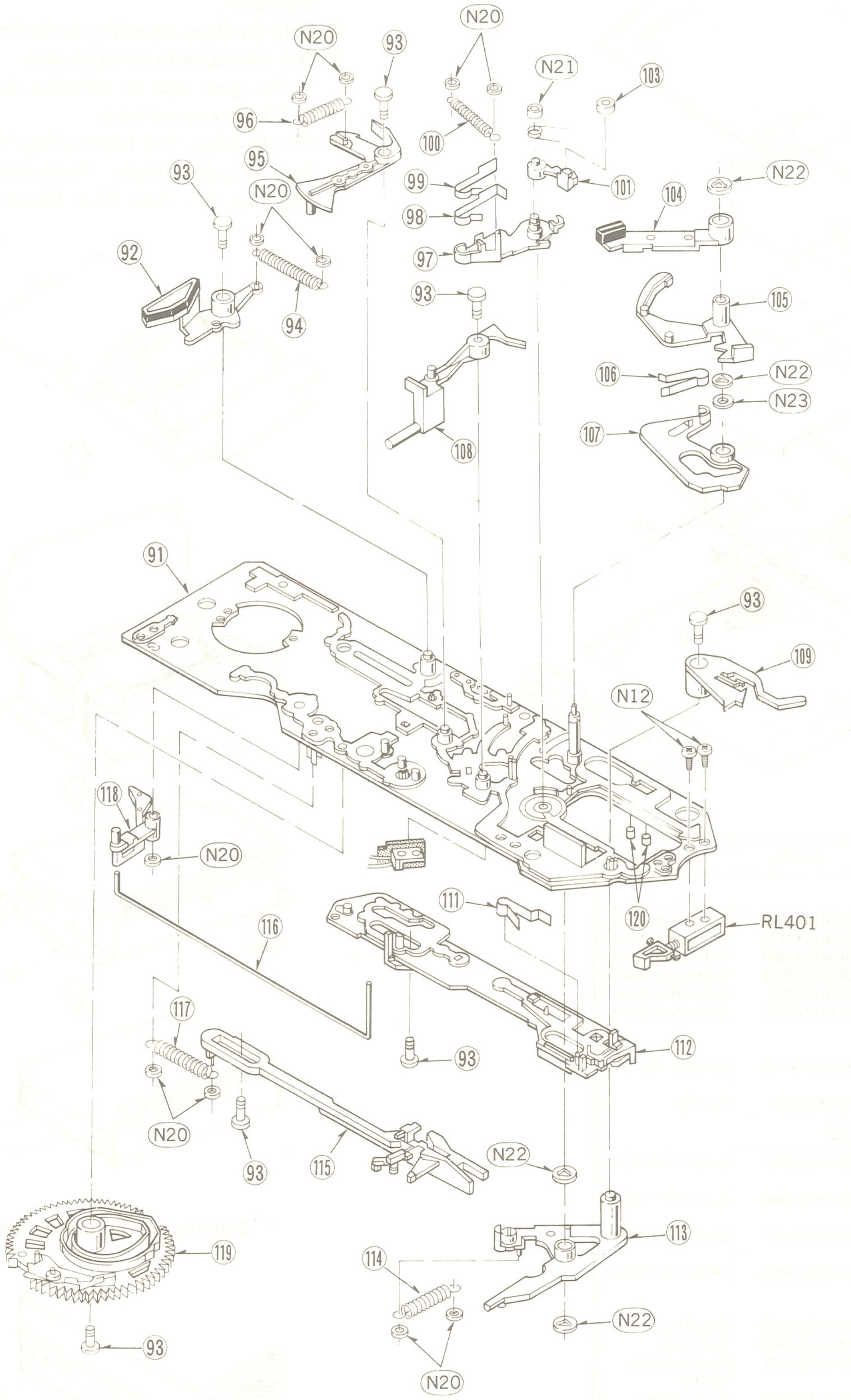

IC301
AN6682
Pitch control
(IC301)
FI
Divider (1/9)
T
Q D
T
R Q
frequency compalator
Mixing
Divider (1/8)
S
Q
R
Stabilizer
Vcc
GND
C.R osillator
Phase comparator
Charge pump
L.P.F.
VCO
FO
RT1
CT1
FRC
RT2
CT2
524.1kHz
Reference frequency adj. VR301
VR302
Pitch control
3.4
2.3
137μsec (7.28kHz)
3.5
1.9μsec (524.1kHz)
15V
9V
5V
IC302
MN4011B
Pitch control on/off select
D301
Reset
S301
(IC302)
490kHz~558.2kHz
Close: Pitch 0% 524.1kHz
Solenoid drive
Q401
RL401
S302
start/stop
D1
Rectifier
S1
Power
T1
AC Line
IC1
Regulator
15V
490kHz~558.2kHz (524.1kHz ±6.5%)
2.2
2.4
0.238μsec (4.193MHz)
4.5
0.4
33rpm, 20msec
45rpm, 14msec
X201
X1
X2
FGO
FGI
FGR
F.G coil
F.G amplifier
(IC201)
Quartz oscillator
Divider (1/8)
Divider (1/4)
Speed comparator
Phase comparator
Schmitt
Wave form shaping
Strobe divider
Synchronous in-rush circuit
Brake timer
Stabilizer
Start/stop selector
Speed selector
VO
PO
SRB
Vcc
ING
GND
BI
SSM
SS
33
45
15V
Strobe
D204 D203
Q201
Storobe drive
12
33rpm, 10msec
45rpm, 7msec
D202
D201
Arm switch S402
S201
S202
S201, 202: Speed selector Switch
IC201
AN6683
Reference signal generation, F.G. amplifier, speed and phase control
(IC101)
LFO
CS
Vcc
LFI
Loop filter amplifier
Current feed back amplifier
GND
Inverse prevention circuit
Hall-element power supply
Hall element signal processing circuit
Output drive circuit
PC
PT
VHO
H1
H1B
H2
H2B
A1
A2
A3
A4
H101
H102
Between A1 and A2
Between A3 and A4
3.0
33rpm, 303msec
IC101
AN6637
Turntable drive

EXPLODED VIEWS

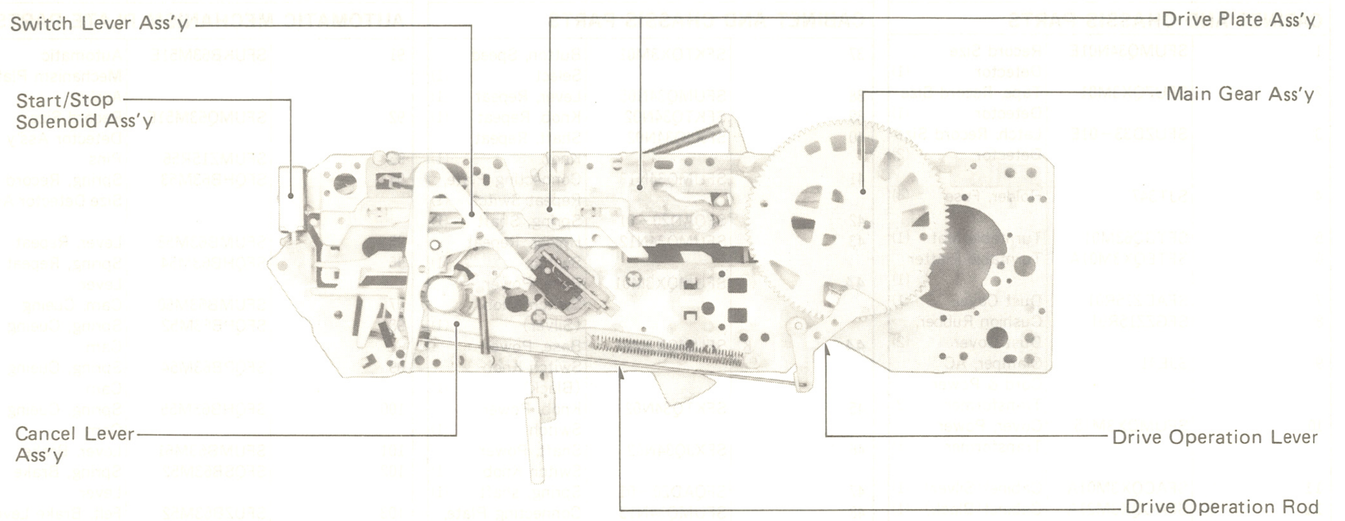
- **Cabinet and chassis parts**

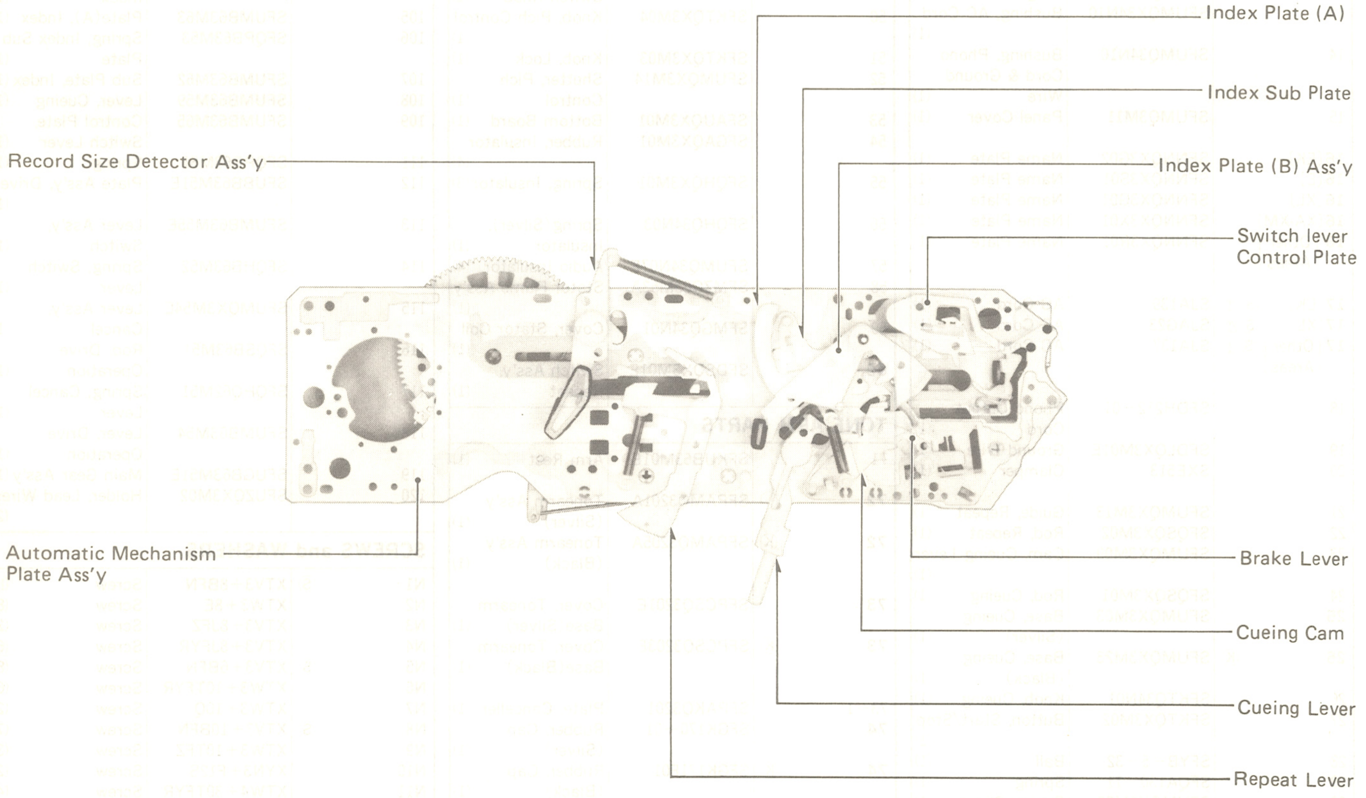

Automatic Mechanism Plate Ass'y
1
2
3
4
5
6
7
8
9
10
11
11-1
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
71
72
73
73-1
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
N1
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N14
N15
N16
N17
N18
N19
N20
N24
N25
N26
N27

- Automatic mechanism plate parts


N20
93
N20
N21
103
96
100
95
N20
93
99
101
N22
104
98
92
97
94
93
105
106
N22
N23
107
108
91
93
109
N12
118
N20
111
120
RL401
116
117
93
112
N20
93
115
N22
113
119
114
N22
N20
93

- Location of automatic mechanism plate


Switch Lever Ass'y
Start/Stop Solenoid Ass'y
Cancel Lever Ass'y
Drive Plate Ass'y
Main Gear Ass'y
Drive Operation Lever
Drive Operation Rod


Record Size Detector Ass'y
Automatic Mechanism Plate Ass'y
Index Plate (A)
Index Sub Plate
Index Plate (B) Ass'y
Switch lever Control Plate
Brake Lever
Cueing Cam
Cueing Lever
Repeat Lever

■ REPLACEMENT PARTS LIST (Mechanical parts)

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. Ⓚ -marked parts are used for black only, while ○-marked parts are for silver type only.
6. Parts other than Ⓚ- and ○-marked are used for both black and silver types.
7. The parenthesized numbers in the columns of description stand for the quantity per set.

Black type model No. : SL-QX300(K)

Areas

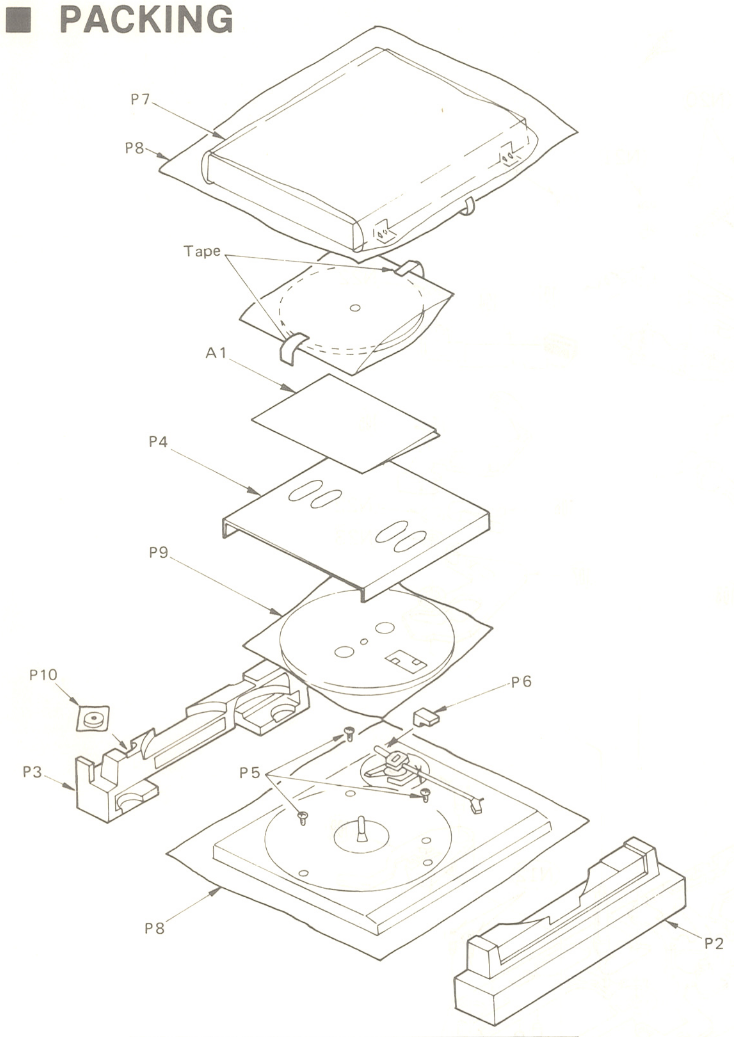
* [E] is available in Switzerland and Scandinavia.
* [EK] is available in United Kingdom.
* [XL] is available in Australia.
* [EG] is available in F.R. Germany.
* [EB] is available in Belgium.
* [EH] is available in Holland.
* [EF] is available in France.
* [Ei] is available in Italy.
* [EC] is available in Czechoslovakia.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XM] is available in Central South America.

Ref. No.	Part No.	Description
CABINET AND CHASSIS PARTS		
1	SFUMQ34N01E	Record Size Detector (1)
2	SFUZQX3M01	Tape, Record Size Detector (1)
3	SFUZD33−01E	Latch, Record Size Detector (2)
4	SJT347	Holder, Fuse (4)
5	SFTGQ63M01	Turntable Mat (1)
6	SFTEQX3M01A	Turntable Platter (1)
7	SFADZ15R01	Dust Cover (1)
8	SFGZZ15R01	Cushion Rubber, Dust Cover (2)
9	SJE41	Clamper, AC Cord & Power Transformer (2)
10	SFUMQX3M15	Cover, Power Transformer (1)
11 ○	SFACQX3M01A	Cabinet (Silver) (1)
11 Ⓚ	SFACQX3M21A	Cabinet (Black) (1)
11−1	SFKBQ63M01	Badge, Cabinet (1)
12	SFATQX3M01A	Hinge (2)
13	SFUMQX34N10	Bushing, AC Cord (1)
14	SFUMQ34N10	Bushing, Phono Cord & Ground Wire (1)
15	SFUMQ3M11	Panel Cover (1)
16〔EK〕	SFNNQX3G02	Name Plate (1)
16〔E〕	SFNNQX3S01	Name Plate (1)
16〔XL〕	SFNNQX3G01	Name Plate (1)
16〔XA-XM〕	SFNNQX3X01	Name Plate (1)
16 (Other Areas)	SFNNQX3R01	Name Plate (1)
17〔EK〕 Ⓢ⚠	SJA139	AC Cord (1)
17〔XL〕 Ⓢ⚠	SJAG23	AC Cord (1)
17 (Other Areas) Ⓢ⚠	SJA137	AC Cord (1)
18	SFDH212−01	Phono Output Cord (1)
19	SFDLQX3M01E	Ground Wire (1)
20	SXE513	Clamper (1)
21	SFUMQX3M13	Guide, Repeat (1)
22	SFQSQX3M02	Rod, Repeat (1)
23	SFUMQX3M09	Cam, Cueing Lever (1)
24	SFQSQX3M01	Rod, Cueing (1)
25 ○	SFUMQX3M03	Base, Cueing (Silver) (1)
25 Ⓚ	SFUMQX3M23	Base, Cueing (Black) (1)
26	SFKTQ34N01	Knob, Cueing (1)
27	SFKTQX3M02	Button, Start/Stop (1)
28	SFYB−5−32	Ball (1)
29	SFQA130−11	Spring (1)
30	SFUMQX3M08	Cueing Slider (1)
31	SFXJQX3M01	Guide Shaft, Cueing Slider (1)
32	SFUMQX3M07	Lever, Cueing Rod (1)
33 ○	SFUMQX3M02	Base, Size Selector, Pich Control & Repeat Knob (Silver) (1)
33 Ⓚ	SFUMQX3M22	Base, Size Selector, Pich Control & Repeat Knob (Black) (1)
34	SFKKQX3M01	Surface Plate (1)
35	SFUMQX3M12	Cover, LED (Strobe) (1)
36	SFUPQX3M01	Reflector (1)

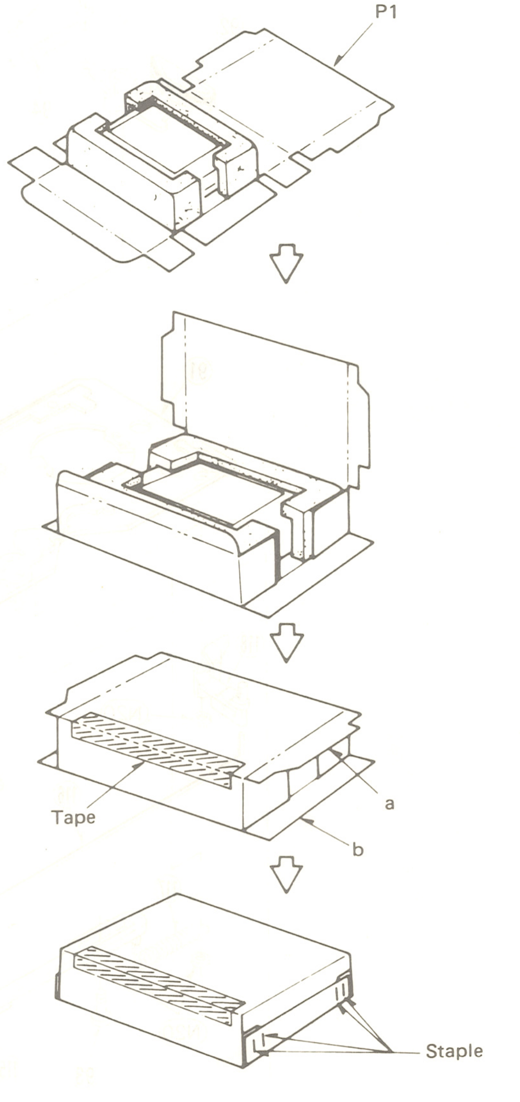
Ref. No.	Part No.	Description
CABINET AND CHASSIS PARTS		
37	SFKTQX3M01	Button, Speed Select (1)
38	SFUMQ34N05	Lever, Repeat (1)
39	SFKTQ34N02	Knob, Repeat (1)
40	SFXJQ34N02	Shaft, Repeat Knob (1)
41	SFUMQ34N13	Connecting Plate, Repeat Switch (1)
42	SFQAD20−01	Spring, Shaft (1)
43	SFUMQ34N12	Holder, Repeat Switch (1)
44 ○	SFUMQX3M01	Base, Power Switch Knob (Silver) (1)
44 Ⓚ	SFUMQX3M21	Base, Power Switch Knob (Black) (1)
45	SFKTQ34N02	Knob, Power Switch (1)
46	SFXJQ34N02	Shaft, Power Switch Knob (1)
47	SFQAD20−01	Spring, shaft (1)
48	SFUMQ34N13	Connecting Plate, Power Switch (1)
49	SFUMQX3M04	Holder, Power Switch Knob (1)
50	SFKTQX3M04	Knob, Pich Control (1)
51	SFKTQX3M03	Knob, Lock (1)
52	SFUMQX3M14	Shutter, Pich Control (1)
53	SFAUQX3M01	Bottom Board (1)
54	SFGAQX3M01	Rubber, Insulator (4)
55	SFQHQX3M01	Spring, Insulator (3)
56	SFQHQ34N03	Spring (Silver), Insulator (1)
57	SFUMQ34N07E	Audio Insulator (4)
58	SFMZQ63M53A	Stator Flame Ass'y (1)
59	SFMGQ34N01	Cover, Stator Coil (1)
60	SFDSQX3M01E	Switch Ass'y, Repeat (1)
TONE ARM PARTS		
71	SFKUB63M01E	Arm Rest (1)
72 ○	SFPAMQ3201A	Tonearm Ass'y (Silver) (1)
72 Ⓚ	SFPAMQ3205A	Tonearm Ass'y (Black) (1)
73 ○	SFPCSQ3201E	Cover, Tonearm Base (Silver) (1)
73 Ⓚ	SFPCSQ3203E	Cover, Tonearm Base (Black) (1)
73−1	SFPAKQ3201	Plate, Canceller (1)
74 ○	SFGK170−01	Rubber, Cap (Silver) (1)
74 Ⓚ	SFGK171F01	Rubber, Cap (Black) (1)
75	SFPABQ3202	Knob, Canceller (1)
76	SFPABQ3203	Plate, Operation (1)
77	SFPZBQ3202	Holder, Plate (1)
78	SFUMZ15R58	Arm Lift (1)
79	SFQAZ15R52	Spring, Arm Lift (1)
80	SFUPB63M51A	Base, Tonearm (1)
81	SFPZBQ3201	Guide, Operation Plate (1)
82	SFQAZ15R51	Spring, Arm Lift (1)
83	SFUPQX3M51	Plate, Operation (1)
84	SFUPB63M53A	Fixing Plate Ass'y, Tonearm (1)
85	SFQHQX3M51	Spring, Canceller (1)
86	SFXWZ15R51	Spring (1)
87	EPC−P33	★Cartridge (1)
88	EPS−P33ES	★Stylus (1)
89	SFCNC02301	Cover, Stylus (1)

Ref. No.	Part No.	Description
AUTOMATIC MECHANISM PLATE PARTS		
91	SFUKB63M51E	Automatic Mechanism Plate Ass'y (1)
92	SFUMQ63M51E	Record Size Detector Ass'y (1)
93	SFUMZ15R56	Pins (6)
94	SFQHB63M53	Spring, Record Size Detector Ass'y (1)
95	SFUMB63M58	Lever, Repeat (1)
96	SFQHB63M54	Spring, Repeat Lever (1)
97	SFUMB63M60	Cam, Cueing (1)
98	SFQPB63M52	Spring, Cueing Cam (1)
99	SFQPB63M54	Spring, Cueing Cam (1)
100	SFQHB63M55	Spring, Cueing Cam (1)
101	SFUMB63M61	Lever, Brake (1)
102	SFQSB63M52	Spring, Brake Lever (1)
103	SFUZB63M52	Felt, Brake Lever (1)
104	SFUMB63M64E	Plate (B) Ass'y, Index (1)
105	SFUMB63M63	Plate (A), Index (1)
106	SFQPB63M53	Spring, Index Sub Plate (1)
107	SFUMB63M62	Sub Plate, Index (1)
108	SFUMB63M59	Lever, Cueing (1)
109	SFUMB63M65	Control Plate, Switch Lever (1)
111	SFQPB63M51	Spring (1)
112	SFUBB63M51E	Plate Ass'y, Drive (1)
113	SFUMB63M55E	Lever Ass'y, Switch (1)
114	SFQHB63M52	Spring, Switch Lever (1)
115	SFUMQX3M54E	Lever Ass'y, Cancel (1)
116	SFQSB63M51	Rod, Drive Operation (1)
117	SFQHQ62M51	Spring, Cancel Lever (1)
118	SFUMB63M54	Lever, Drive Operation (1)
119	SFUGB63M51E	Main Gear Ass'y (1)
120	SFUZQX3M02	Holder, Lead Wires (2)
SCREWS and WASHERS		
N1 Ⓢ	XTV3+8BFN	Screw (16)
N2	XTW3+8E	Screw (8)
N3	XTV3+8JFZ	Screw (2)
N4	XTV3+8JFYR	Screw (6)
N5 Ⓢ	XTV3+6BFN	Screw (8)
N6	XTW3+10TFYR	Screw (6)
N7	XTW3+10Q	Screw (2)
N8 Ⓢ	XTV3+10BFN	Screw (7)
N9	XTW3+10TFZ	Screw (3)
N10	XYN3+F12S	Screw (2)
N11	XTW4+30TFYR	Screw (4)
N12	XYN2+C4FZ	Screw (2)
N13	XTS3+16FFZ	Screw (1)
N14	SFXGQ34N02	Screw (1)
N15	SFXGQ20−01	Screw (1)
N16	SFPEV0P301	Screw (1)
N17	SFPEVQ3201	Screw (1)
N18	SFXJQX3M01	Screw (1)
N19	XTV3+10JFYR	Screw (4)
N20	SFXWZ15R51	Washer (13)
N21	SFUMZ15R61	Washer (1)
N22	SFXWB63M52	Washer (1)
N23	SFXWB63M53	Washer (1)
N24	SFPEWQ3202	Washer (1)
N25	SFPEWQ3201	Washer (1)
N26 Ⓢ	XWC3B	Washer (2)

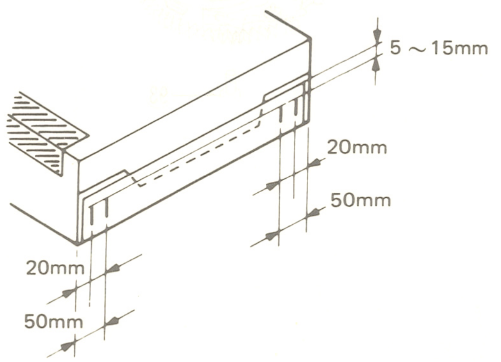
■ PACKING



1. Plase the unit (with cushions attached) as illustrated.
2. Fold the flaps according to the line marks.
3. Seal the top with adhesive tape.
   * Use gum tape or adhesive cloth tape of 50mm wide at least.
4. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only flap "b". (Use 15 or 16mm staple)



* Stapling positions are shown below.



Ref. No.	Part No.	Description
ACCESSORIES		
A1〔EK〕	SFNUQX3G01	Instruction Book (1)
A1〔XL-XA-XM〕	SFNUQX3X01	Instruction Book (1)
A1〔EG〕	SFNUQX3R01	Instruction Book (1)
A1〔EF〕	SFNUQX3F01	Instruction Book (1)
A1〔EI〕	SFNUQX3I01	Instruction Book (1)
A1 (Other Areas)	SFNUQX3S01	Instruction Book (1)
A2	SFWE212−01	Adaptor, 45 r. p. m (1)
A3〔XA-XM〕 ⚠	SFDKI19118	2p Plug (1)
PACKING PARTS		
P1〔EF〕 ○	SFHPQX3C01	Carton Box (Silver) (1)
P1 (Other Areas) ○	SFHPQX3M01	Carton Box (Silver) (1)
P1〔EF〕 Ⓚ	SFHPQX3C21	Carton Box (Black) (1)
P1 (Other Areas) Ⓚ	SFHPQX3M21	Carton Box (Black) (1)
P2	SFHHQX3M01	Pad, Front (1)
P3	SFHHQX3M02	Pad, Rear (1)
P4	SFHDQ34N01	Pad, Turntable Platter (1)
P5	SFXGQX3M01	Screw, Clamp (3)
P6	SFHZQX3M01	Pad, Tonearm (1)
P7	SFHZD03M01	Sheet, Dust Cover (1)
P8	SFYH60×60	Polyethylene Bag, Unit & Dust Cover (2)
P9	SFYH40×45	Polyethylene Bag, Turntable Platter (1)
P10	SFYF09A15	Polyethylene Bag, 45 r. p. m. Adaptor (1)

Printed in Japan
83069900 Ⓗ AM/YW

SERVICE NEWS

An alle Filialen
Kundendienstzentralen
Autorisierten Fachhändler
Serviceberater/Schulungsleiter
QC/EK/VK/Techn. Klarstellung

Panasonic Service
Deutschland GmbH

Nr.: 269

Datum: 17.Februar 1984 WK/MM

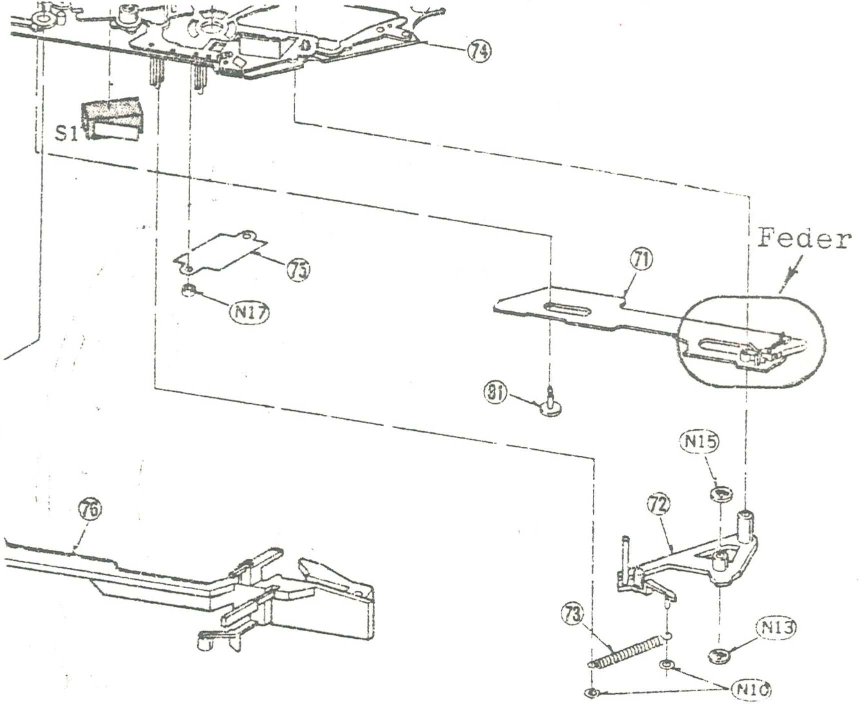
10/84

THEMA	TEXT
SL-Q 300 SL-Q 200 SL-B 300 SL-B 210 Aufsetzpunkt verändert sich	

Phänomen: Der Aufsetzpunkt "verspringt" beim Vorlauf in die Aufsetzposition.

Grund: Die Feder im Positionsteil 71, siehe Skizze, ist während der Funktion zu stark, d.h. die Feder arretiert den Umlenkhebel mit der eigenen Federkraft zu stark, dabei "verspringt" der Aufsetzpunkt.

Abhilfe: Die Federspannung muß von Hand verringert werden.
Funktionsablauf überprüfen.



Panasonic Service
Deutschland GmbH
W. Klingler

SERVICE NEWS

An alle Filialen
Kundendienstzentralen
Autorisierten Fachhändler
Serviceberater, Schulungsleiter
QC/EK/VK/Techn. Klarstellung

Panasonic Service
Deutschland GmbH

Nr.: 266

Datum: 15.Januar 1984 Herr Martens WK/MM 7/84

THEMA	TEXT
SL-Q 300 SL-Q 200 SL-B 300 SL-B 210 Aufsetzpunkt	Phänomen: Bei Reparatureingang beanstandet der Kunde, daß der Aufsetzpunkt nicht richtig ist - läßt sich nicht einstellen.
Plate, PU fixing assy verbogen	Grund: Die Einstellschraube für den Aufsetzpunkt, exzentrisch und aus Kunststoff, ist schwergängig. Durch diese Schwergängigkeit wird zu viel Druck auf die Grundplatte ausgeübt - und sie wird verbogen!
SFUPB63M52A	Abhilfe: Nur durch Erneuern der Platte, PU-fixing assy, ET-Nr. SFUPB63M52A , Service Manual, Seite 16, Position 49.

Panasonic Service
Deutschland GmbH

W. Klingler

SERVICE NEWS

Panasonic Service
Deutschland GmbH

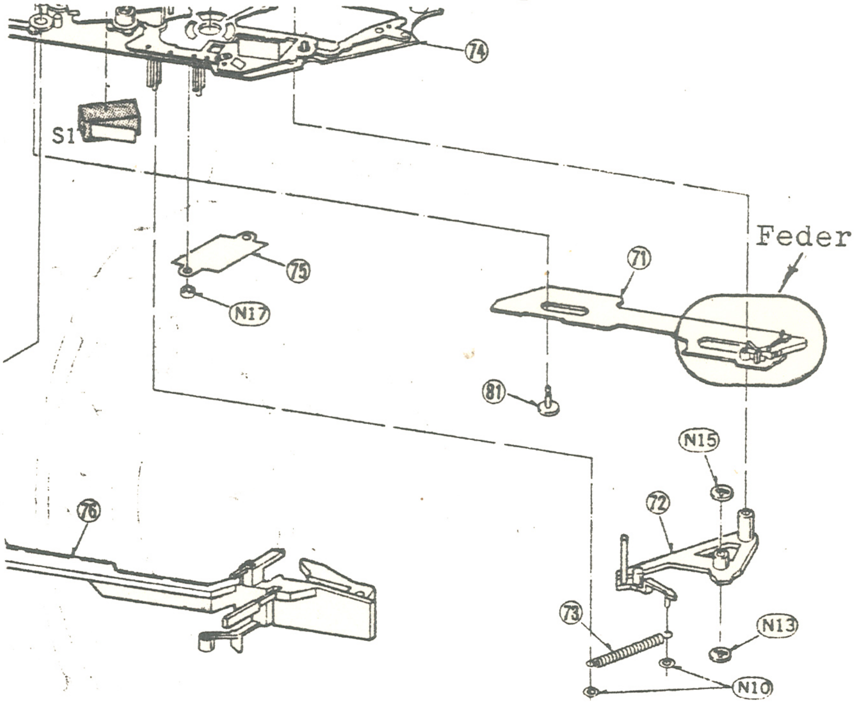
An alle Filialen
Kundendienstzentralen
Autorisierten Fachhändler
Serviceberater/Schulungsleiter
QC/EK/VK/Techn. Klarstellung

Nr.: 269

Datum: 17.Februar 1984 WK/MM

10/84

THEMA	TEXT
SL-Q 300 SL-Q 200 SL-B 300 SL-B 210 Aufsetzpunkt verändert sich	Phänomen: Der Aufsetzpunkt "verspringt" beim Vorlauf in die Aufsetzposition. Grund: Die Feder im Positionsteil 71, siehe Skizze, ist während der Funktion zu stark, d.h. die Feder arretiert den Umlenkhebel mit der eigenen Federkraft zu stark, dabei "verspringt" der Aufsetzpunkt. Abhilfe: Die Federspannung muß von Hand verringert werden. Funktionsablauf überprüfen.



Panasonic Service
Deutschland GmbH
W. Klingler

SERVICE NEWS

An alle Filialen
Kundendienstzentralen
Autorisierten Fachhändler
Serviceberater, Schulungsleiter
QC/EK/VK/Techn. Klarstellung

Panasonic Service
Deutschland GmbH

Nr.: 266	Datum: 15.Januar 1984 Herr Martens WK/MM 7/84
THEMA	**TEXT**
SL-Q 300 SL-Q 200 SL-B 300 SL-B 210 Aufsetzpunkt	Phänomen: Bei Reparatureingang beanstandet der Kunde, daß der Aufsetzpunkt nicht richtig ist - läßt sich nicht einstellen.
Plate, PU fixing assy verbogen	Grund: Die Einstellschraube für den Aufsetzpunkt, exzentrisch und aus Kunststoff, ist schwergängig. Durch diese Schwergängigkeit wird zu viel Druck auf die Grundplatte ausgeübt - und sie wird verbogen!
SFUPB63M52A	Abhilfe: Nur durch Erneuern der Platte, PU-fixing assy, ET-Nr. SFUPB63M52A , Service Manual, Seite 16, Position 49.

Panasonic Service
Deutschland GmbH

W. Klingler